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THE 1935 AGRICULTURAL OUTLOOK FOR CALIFORNIA¹

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PREFACE

THIS REPORT PRESENTS A SUMMARY of the present available facts bearing upon the future trends of production of important farm products produced in California, together with a summary of the present situation of these products with regard to supply, demand, and prices.

The information upon which this report is based was obtained from many sources, among the more important of which are the United States Department of Agriculture Bureau of Agricultural Economics, United States Department of Commerce, California Coöperative Crop Reporting Service, Federal-State Market News Service, and many coöperative associations and commercial companies. The national *Agricultural Outlook for 1935* prepared by the staff of the United States Department of Agriculture Bureau of Agricultural Economics assisted by the representatives of the State Agricultural Extension Services and the Agricultural Adjustment Administration has been particularly helpful and has been quoted extensively for those products grown throughout the United States.

APPLES

With average weather conditions and average care of orchards, the production of apples in the United States during the next five years will probably be equal to and may exceed the somewhat lower-than-average production of the last five years. However, because of recent excessive damage from drought and cold weather and continued heavy deterioration and removal of farm and generally unprofitable commercial orchards, accompanied by very little planting of trees during the last five years, moderate replacements and plantings will be necessary to maintain the present volume of production ten to fifteen years from now.

The Agricultural Census of 1935 is expected to show the total number of apple trees in the United States to be less than one-half of the number reported in 1910. The total number will probably approximate 95,000.-

¹ Paper No. 57, The Giannini Foundation of Agricultural Economics,

000 trees. Between 1910 and 1925 there was a net decrease of 79,000,000 apple trees in the United States. By 1930 the number had fallen an additional 21,000,000. A further decrease of at least 18,000,000 trees since 1930 has been estimated, bringing the total net reduction since 1910 to 118,000,000 trees.

Despite the very large shrinkage in the number of apple trees in the United States during the past two decades, the production has experienced only a moderate decline. During the ten-year period, 1910–1919, apple production in the United States averaged about 189,000,000 bushels. The 1930–1934 average production of 150,000,000 bushels reflects a decrease of 21 per cent from the levels of the earlier period. The shift from farm to commercial orchards with better locations, and the higher yields obtained with better care, higher-producing varieties, and the like have tended to offset the influence of declining tree numbers.

During the past five years, 1930–1934, the average production of apples in the eleven western states averaged approximately 54,000,000 bushels a year. This represents an increased production of 26,000,000 bushels, or 92 per cent, over the 1910–1919 average. In these states a relatively small percentage of the trees is yet to come into bearing, and a relatively large percentage has reached, or soon will reach, full-bearing capacity. Under average growing conditions the trend of production may be slightly downward during the next few years.

Apple production in California rose from an average of 5,718,000 bushels in the 1910–1919 period to an average of 9,179,000 bushels in 1930–1934, an increase of 61 per cent. The estimated production in 1934 is 6,760,000 bushels, of which 4,212,000 bushels, or 62 per cent, are classified as commercial crop.

Much of this increase in the production of apples in California has been in the production of the Gravenstein variety in the Sonoma-Napa district. It has been estimated that shipments of Gravensteins from this district averaged 647,000 boxes in 1921–1925, 1,057,000 boxes in 1926–1930, and 1,305,000 boxes in 1931–1933.

A further increase in Gravenstein apple production may be expected. In 1932, 13 per cent of the total acreage of apples in Sonoma and Napa counties was nonbearing. Moreover, a large portion of the bearing acreage had not yet reached the age of full bearing.

Farm prices of Fancy Gravensteins in the Sonoma-Napa district averaged \$0.69 a box in 1934. In 1933, the farm price was \$0.28 a box; in 1932, \$0.17 a box; and during the preceding five-year period, 1927–1931, \$0.93 a box. Shipments of Gravenstein apples from this area amounted to 762 cars in 1934 as compared with 1,555 cars in 1933 and an average of 1,699 cars during the preceding five years.

Exports of apples from the United States during the 1933-34 season amounted to 12,300,000 bushels, or about 18 per cent of the commercial production. In the five seasons, 1928-29 to 1932-33, they averaged 17 per cent of the commercial apple crop of the United States. Exports of United States apples go chiefly to the United Kingdom, Germany, and the Netherlands. During the five-year period, 1928-29 to 1932-33, the United Kingdom took 44 per cent, Germany 17 per cent, and the Netherlands 11 per cent of the total exports from this country.

Apple exporters may expect keener competition in foreign markets. Many of the importing countries, as a part of their nationalistic policies, are fostering the growing of fruit. Moreover, such exporting countries as Canada, Australia, and New Zealand have increased their apple exports very rapidly in recent years and will doubtless continue to ship large volumes. In practically all apple-producing countries some progress has been made in improving yields and quality.

The export outlet is highly important to the United States apple industry. Many orchards in both the Pacific and Atlantic Coast states were planted with the intention of marketing a large portion of the crop abroad. A satisfactory maintenance of this outlet depends very largely upon the successfulness of efforts designed to stimulate foreign trade through the removal or lowering of trade barriers.

APRICOTS

Although a gradual decrease in the bearing acreage of apricots may be expected, the trend of production in the state will probably not turn downward for a few years because of the increase in yields from young acreage which has recently come into bearing. As contrasted with the rapid increase in production during the past twenty years, a fairly stationary situation is in prospect for several years, with average production considerably in excess of 200,000 tons.

Because yields per acre were the lowest in over ten years, 1934 production is now estimated at only 140,000 tons as compared with an average of 272,000 tons for the "bumper" crops of the three preceding years. Most apricot orchards flowered very irregularly in 1934, and the set was further reduced by brown and green rot. Also a serious hail storm during the last week in May damaged the crop in San Benito County. Yields for the state as a whole on October 1, 1934 were estimated at 1.8 tons per bearing acre or only 60 per cent of the average of 3.0 tons per acre of the past five years.

Preliminary estimates of apricot acreage indicate a decrease in the total bearing and nonbearing from 83,800 acres in 1933 to 81,600 in

1934. Of the 1934 acreage, 79,000 acres, or nearly 97 per cent, were in bearing and 2,600 not yet in bearing. The small nonbearing acreage is not sufficient to offset the normal removal of trees due to old age. However, the decrease of several thousand bearing acres to be expected during the next four years will probably not reduce production correspondingly because of the increase in yields on the young acreage which has recently come into bearing. Four years from now, however, all of the present bearing acreage will be in full bearing and the older acreage will be declining in productivity. Thus, at that time a downward trend in production will be started unless plantings in the meantime are larger than the average of the past few years.

In order to utilize the large crops of apricots produced during the years 1931–1933, a big increase took place not only in the tonnage dried, but in the proportion dried. The average harvested production of the state during the years 1928–1930 was 194,000 tons. Approximately 64 per cent of this production was dried, 26 per cent canned, and 10 per cent consumed fresh. Of the average harvested production of 266,000 tons during the years 1931–1933, approximately 76 per cent was dried, slightly over 14 per cent canned, and about 10 per cent consumed fresh.

Dried Apricots.—The dried output of the state increased from an average of 22,700 tons in the years 1928–1930 to 36,700 tons during 1931–1933. Because of the small apricot crop in 1934, it is estimated that only about one-half as many were dried as in the large-crop years of 1931–1933. The relative decrease in the 1934 canned pack as compared with 1933 was not nearly as great as in the case of the dried output, and so the proportion of the small 1934 apricot crop that was canned increased to about 23 per cent, whereas the proportion dried decreased.

The tonnage of California dried apricots shipped during the last three marketing years has been just about as great as production. The movement for the year beginning July 1, 1933, was the largest in the history of the industry. Domestic and export movement has been about equal for several years.

Exports for the year beginning July 1, 1933, were 18,308 tons as against 17,135 tons during the preceding year and 18,811 tons during the year beginning July 1, 1931. Average exports for the last three years of 18,085 tons were nearly 66 per cent greater than average exports of 10,905 tons in the preceding five years, 1926–1930. That export sales have expanded just about as much as domestic consumption in recent years is indicated by the fact that the percentage of the state's dried output exported has averaged approximately 49 during the last eight years. Exports to foreign countries have been stimulated considerably since the United States went off the gold standard in April, 1933,

This had the effect of lowering the cost of our money in terms of the money of most of our chief foreign buyers.

Largely because of the very short crop, prices of both dried apricots and canning apricots were extraordinarily good in 1934. The Federal-State Market News Service reports that packers paid growers from 14½ to 17⅞ cents a pound for Choice dried Blenheims in the Santa Clara Valley in 1934, as compared with a range of from 7½ to 9½ cents in 1933. Similarly, prices in the Modesto area ranged from 14¾ to 17 cents during the 1934 drying season as compared with 7¼ to 9½ cents in 1933, and in the southern part of the San Joaquin Valley the range in 1934 was from 11½ to 14 cents, in 1933 from 6½ to 9 cents.

Packers' quotations on Choice dried apricots during the six months, July to December, rose from the post-war low of 7.3 cents a pound in 1932 to 10.3 cents in 1933 and will average over 18.0 cents for the corresponding six months in 1934, the highest price since 1926.

Canning Apricots.—Largely because of the very short crop, prices paid growers for canning apricots in 1934 were the best since 1929. Prices rose rapidly during the canning season, and the crop ran heavily to large-sized fruit. In the Santa Clara district growers are estimated to have received about \$70 a ton on the average, for apricots averaging 12 to the pound, as against about \$30 a ton in 1933 and an average of \$52 during the five years 1927–1931. In the San Joaquin district prices were about \$15 a ton lower than in the Santa Clara district.

Total shipments of canned apricots in 1933–34 amounted to 2,572,000 cases as against an average of 2,017,000 cases for the two preceding years and 2,726,000 cases during the five years 1926–27 to 1930–31. The carryover on June 1, 1934, the smallest since June 1, 1929, was only 167,000 cases as compared with 323,000 on June 1, 1933, and 515,000 cases the preceding year.

Exports of canned apricots in 1933–34 amounted to 538,000 cases as against 476,000 in 1932–33, 496,000 cases in 1931–32, and an average of 635,000 cases during the five years 1926–27 to 1930–31. In 1933–34, nearly 21 per cent of total shipments were exported as against an average of about 22 per cent during the previous five years.

Exports to Canada amounted to only 926 cases in 1933–34 and an average of 2,500 cases in the two preceding years as compared with an average of 26,200 cases during the four years 1927–28 to 1930–31. In August, 1931, the Canadian general import duty on canned fruits was raised to 5 cents a pound, which rate practically prohibits the United States from exporting canned apricots to that country. Exports of canned apricots to the United Kingdom, by far our most important foreign market, have been influenced by opposing forces during the

past two years. In November, 1932, the United Kingdom placed an import duty on canned fruits of 15 per cent ad valorem, which tended to curtail our exports to that country. On the other hand, the depreciation of the dollar in terms of pound sterling since April, 1933, has stimulated our exports to Great Britain by enabling British importers to purchase our canned fruit much more cheaply in 1933-34 than in 1932-33. In terms of dollars, the average export price of canned apricots was \$2.68 a case in 1933-34 or about 15 per cent higher than the average of \$2.29 in 1932-33. In terms of English pounds sterling, however, the 1933-34 price was actually about 13 per cent less than in 1932-33. Although continuation of foreign exchange rates like those of the past year will be relatively favorable to imports of our canned apricots into Great Britain, their influence will probably be more than offset by the big increase in the California price of the 1934 pack.

California canners reported an average selling price of \$2.37 a case for canned apricots during the year beginning June 1, 1933, as compared with \$2.23 for the 1932-33 season and \$2.64 for 1931-32. As compared with the average selling price of \$3.83 a case during the three marketing years 1926-27, 1927-28, and 1928-29, the 1933-34 average of canned apricots declined 38 per cent as against a decline of about 39 per cent in canned pear prices, 31 per cent in canned peach prices, and about 20 per cent in canned pineapple prices. Canners' quotations per case on unadvertised brands of Choice, unpeeled halves of canned apricots rose from a post-war low of \$2.30 in April, 1933, to \$3.20 in April, 1934, and by October, 1934, had risen to \$4.40 a case or only about \$0.30 less than average quotations for 1926-27 through 1928-29.

Fresh Apricots.—Shipments of fresh apricots from the state in 1934 were the smallest since 1926, amounting to only 340 carloads as compared with 581 in 1933 and an average of 990 carloads in the peak years of 1931 and 1932. Partly because of light supplies in eastern markets, the price of Royals in the New York and Chicago delivered auction markets averaged 8 cents a crate more than in 1933. Reduced to an approximate f.o.b. basis, prices in these two markets returned about \$1.04 a crate in 1934 as against \$0.96 in 1933.

Eastern markets have never afforded an outlet for any considerable portion of the California apricot crop. Even in 1931 and 1932, when interstate shipments were the largest on record, being over twice as large as the average of the previous five years, they accounted for only about 12,000 tons of apricots. The chief limiting factor in the eastern shipments of this fruit is its extreme perishability. The necessity for handling fresh apricots quickly makes it desirable to sell them in a few large auction markets rather than in many private sales.

AVOCADOS²

According to the United States Census of 1920 about 12,000 avocado trees of bearing age were in California at that time. In the following ten years, there was a ten-fold increase so that the 1930 Census reported 131,000 trees of bearing age. The estimated bearing acreage of avocados in 1934 was 7,000. In addition to this 5,900 acres were not yet of bearing age. At present, however, no avocado orchards of any one variety in California may be said to have reached full-bearing age. The oldest plantings of this kind are still less than twenty years old; and, in fact, no commercial plantings of any kind exceed this age.

While large, old, individual trees exist which in some years have given phenomenal yields, it is already clear that these cannot safely be used as criteria for estimating the production from orchard plantings. In general orchard yields thus far have proved to be small, although individual trees of commercial varieties which have produced 600 to 1,000 fruits in one season are by no means uncommon. In nearly all cases, however, the succeeding crop is hardly 25 per cent of these amounts. Experience thus far indicates that with most of the varieties now grown, on the average in any five-year period, the grower may reasonably expect two good crops, one or two fair crops, and one or two poor crops. This alternate habit of bearing is a major problem in the industry. On account of the newness of the industry it is necessarily far from being standardized or stable with reference to varieties, production methods, and marketing procedure. Important changes may therefore be expected to occur before a condition of relative stability is reached.

Production for the state as a whole has increased rapidly but with wide fluctuations from one year to the next due partly to climatic conditions and partly to the alternate-bearing habit mentioned above. The 1934-35 crop, unofficially estimated at from 15,000,000 to 18,000,000 pounds at the beginning of the season, is by far the largest in the history of the industry and is due to a combination of favorable climatic conditions and the fact that this is the "on-crop" year.

At one time when production was small, prices of \$0.60 to \$1.00 a pound to the producer were not uncommon. As production increased, however, average price levels declined. While high prices still prevail during certain seasons of the year when supplies are low, average returns to the growers per tree have now reached the point where they represent only a small fraction of the return of a decade or so ago.

While the Florida avocado industry has suffered severely from

² This brief discussion is adapted from: Hodgson, Robert W. The California Avocado industry. California Agr. Ext. Cir. 43:1-94. Revised 1934.

climatic and other vicissitudes in recent years, the production there will probably increase. In 1933-34, 4,400,000 pounds were reported produced in Florida as compared with 2,800,000 pounds in 1932-33. According to the United States crop reports, the 1934-35 Florida production probably will exceed considerably that of 1933-34. New plantings are now being made which, if successful, will materially increase the Florida production.

For many years imports of avocados into the United States have supplied the bulk of the domestic market. From 1921-22 to 1930-31 they increased from 2,332,000 pounds to 9,883,000 pounds. Such imports are destined for the markets in the eastern states. About 99 per cent of the imports have originated in Cuba except in 1927 and 1928 when the severe hurricane of September, 1926, caused a drastic reduction in shipments.

Production costs in Florida and Cuba are much lower than in California and will probably remain so. On the other hand, it appears that the California growers enjoy certain advantages, which if utilized to the fullest possible degree may equalize or even outweigh the disparity in production costs. The California industry has been developed almost altogether on the basis of the Guatemalan varieties in contrast to that of Florida and Cuba where at present production consists mainly of West Indian varieties or seedlings. While individual preferences vary and are often strongly marked, experience in general indicates that the range of sizes afforded by the former group and their more pronounced and distinctive flavor constitute an important marketing advantage. In most markets the large size of the West Indian fruit is a handicap. Moreover the appearance of the California fruit, owing largely to climatic conditions, is usually more attractive. While Guatemalan varieties can be, and to a certain extent are, grown in Florida, there is reason for believing that their flavor and keeping qualities are inferior to the California fruit. The availability of California supplies the year round is likewise an advantage of considerable importance. The California avocado industry also enjoys a decided advantage in that it is organized to a much greater degree than elsewhere.

CHERRIES

The trend of cherry production on the Pacific Coast is still upward. Except in years of lower-than-average yields, the production during the next several years may be expected to exceed the average production of the past several years. This increased production can be anticipated as a result of the larger bearing capacity of young orchards.

The total acreage of cherries in California in 1934 amounted to 17,800 acres, of which 14,700 or 82.6 per cent were in bearing and 3,100 acres or 17.4 per cent were nonbearing. During the past fourteen years, the bearing acreage of cherries in this state has increased from 8,800 acres in 1921 to 14,700 acres in 1934—an average increase of approximately 420 acres a year.

The 1934 crop of cherries in California is now estimated at 15,680 tons as compared with a production of 24,900 tons in 1933, and an average of 18,760 tons during the five years 1928–1932. Yields per acre in 1934 were the lowest since 1927 and, with the exception of the very low 1927 yields, the lowest during the fourteen-year period since 1921. The condition of the crop was 49 per cent of normal in 1934 as compared with the thirteen-year 1921–1933 average of 64 per cent.

The estimated production of cherries in the Pacific Northwest in 1934 was relatively larger than the production in California. The 1934 crop in Washington and Oregon was only 4 per cent below the average for the five preceding years, whereas the production in California was 16 per cent below the corresponding five-year average.

Fresh Cherries.—As a rule, on account of the earliness of the season, California fresh cherries meet with little competition from those produced in other states. In 1934 the California shipping season was at least a week earlier than usual and about three weeks earlier than the 1933 season. In general, however, the 1934 cherry deal was not a very satisfactory one. Late spring rains at the time of maturity caused a material reduction in the quality and size of the crop.

During the ten-year period 1921–1930, interstate shipments of California cherries increased at the average rate of approximately 20 cars a year. Between 1927 and 1931, the average annual movement from the state amounted to 778 cars. In 1934, 790 cars were shipped, as compared with 842 cars in 1933 and 728 cars in 1932.

The average f.o.b. price of California fresh cherries in 1934 was \$0.91 a 15-pound lug. In 1933, the comparable price was \$1.00; in 1932, \$1.28. The volume of cherries shipped from California in 1934 was 6 per cent smaller than in 1933 and the price received for them was 9 per cent lower.

Canned Cherries.—Between 1921 and 1930 the pack of canned cherries on the Pacific Coast increased at the rate of approximately 53,000 cases a year. During the five-year period 1921–1925, the average pack amounted to 657,800 cases. The pack in the subsequent five years averaged 924,400 cases. In 1931, 421,000 cases were packed; in 1932, 522,000; and in 1933, 964,000. The data for 1934 are not yet available.

Although the trend in the pack of canned cherries on the Pacific

Coast has been upward, the pack in California has declined somewhat, falling from an average of 362,000 cases between 1921 and 1925 to an average of 352,000 cases in the 1926-1930 period. This decrease was more than offset by the increase in the pack in the Pacific Northwest. The pack in Washington and Oregon was nearly twice as great between 1926 and 1930 as during the previous five-year period.

In 1934 California canned the smallest pack of cherries recorded since 1914. This pack of 165,000 cases was 59 per cent lower than the 1933 pack and 53 per cent below the 1926-1930 average. The 1934 pack figures for the Pacific Northwest are not yet available.

The Royal Ann (Napoleon) cherry is the principal variety used for canning on the Pacific Coast. From 1921 to 1930 the average price paid growers for No. 1 Royal Ann cherries was 8.3 cents a pound. The price in 1932 was 3 cents a pound; in 1933, 4 cents a pound; and in 1934, 5 cents a pound. Cannery quotations on No. 2½ Choice Royal Ann cherries, which averaged \$2.35 a dozen cans in 1931-32, fell to \$1.80 a dozen cans in 1932-33 and to \$1.75 a dozen cans in 1933-34. Quotations on the 1934 pack through September have averaged \$2.20 a dozen cans.

Maraschino Cherries.—The use of Royal Ann cherries in the manufacture of maraschino and glacé cherries has been increasing. It has been estimated that in 1933 about 100,000 barrels of 250 pounds each were packed on the Pacific Coast—40,000 barrels in California and 60,000 barrels in the Pacific Northwest. In 1932 the total pack on the Pacific Coast was approximately 60,000 barrels; in 1931, 46,000 barrels; and in 1930, 29,000 barrels. The 1934 pack was small.

In the 1933-34 season the United States imports of cherries sulfured or in brine amounted to 1,866,000 pounds, as compared with 1,801,000 pounds in 1932-33, and an average of 15,310,000 pounds during the three years 1928-29 to 1930-31.

GRAPES

Until economic conditions substantially improve, there is danger that normal crops from the present bearing acreage of grapes in the United States may exceed the quantity our markets can reasonably be expected to consume as wine, brandy, raisins, and fresh table grapes. Moreover, foreign supplies of grapes and grape products will probably be so plentiful during the next few years that imports will invade our domestic market unless restricted therefrom, and foreign import duties and trade restrictions will become so great that expansion of our export markets will be difficult.

Although improved economic conditions during the next few years

will bring about some increase in demand and consumption of California table grapes, raisins, wine, and brandy, it is questionable whether such improvement will be great enough in the next two or three years to remove the danger of excessive supplies of grapes for wine and brandy making, whenever weather conditions result in state yields near normal. Lack of rainfall, abnormally hot weather, and heavy insect infestations are the chief reasons why yields per acre and production of grapes in California have been much below normal in three of the last five years, including 1934, particularly in the San Joaquin Valley.

Wine Grapes.—Developments during the first year after Repeal and further study of the wine and brandy industry of the United States in the pre-Prohibition era serve further to substantiate the conclusion arrived at in the outlook report of a year ago that “no general increase in grape acreage appears to be justified.” In addition to supplying as great a tonnage of table grapes and raisins as has been consumed annually during the last five years, the present bearing acreage of grapes in the United States is sufficient, at normal yields per acre, to provide for as large a per-capita consumption of wine and brandy in the United States as was ever absorbed before Prohibition even under circumstances much more favorable to consumption than can reasonably be expected to prevail for several years. Normally, not only large crops of the strictly wine-grape varieties, but also considerable quantities of raisin and table varieties—such as the Muscat, Tokay, and Malaga—will be available for wine and brandy making in California.

The total bearing acreage of vineyards in California is not likely to decrease much during the next few years. Plantings of true wine-grape varieties made since Repeal are probably sufficient to just about maintain the present bearing acreage of this class of grapes, while the acreages of table and raisin grapes will probably nearly hold their own. On the other hand, the major influences determining wine and brandy consumption in the United States during the next few years may be considerably less favorable to high per-capita consumption than they were during the peak period of consumption in pre-war days. It appears, therefore, that the wine, brandy, and wine-grape industry will probably go through a difficult period of readjustment of supply, demand, and prices during the next few years.

Foreign markets for our wines will probably not be attractive enough to justify California in attempting to ship much wine or brandy abroad. The pre-Prohibition wine and brandy industry of California was built primarily on the basis of supplying the domestic market, and exports were never of any material importance. Moreover, the foreign wine industry has produced heavily in recent years and has accumulated large

stocks which it is exporting wherever possible at very low prices. Some of the more important factors less favorable to wine consumption and prices now as compared with the pre-Prohibition years 1909–1913 are as follows:

The adverse economic conditions and low purchasing power of our people are a serious handicap to consumption of a commodity like wine which is a luxury to many people. High taxes, sales-license fees, and regulations are restricting the sale of wines in many states and seriously limiting their consumption outside of California.

Because of our immigration laws and depressed business conditions and unemployment in the United States, the number of wine-drinking immigrants coming from southern Europe is very small as compared with the big influx that took place in the two decades before the World War. The number of natives from southern Europe in the United States is decreasing and their children generally do not seem to be as fond of wine as were their parents.

Statistics of consumption of alcoholic beverages in the United States for several decades before Prohibition show that the American people as a whole never consumed much wine but preferred beer and distilled spirits, while available information indicates that conditions existing during Prohibition were more favorable to a cultivation of the use of “hard” liquors in mixed social gatherings rather than to the use of wine. The relatively small consumption of wine in pre-war years is shown by the fact that during the years 1909–1913, when consumption of wine in the United States was at its peak, it averaged only 0.52 gallon per capita as compared with about 1.50 gallons of distilled spirits, chiefly whiskey, and over 20 gallons per capita of malt liquors, practically all beer.

Although no *general* increase in grape acreage appears to be justified, some shift in wine-grape plantings may prove profitable in the case of particular varieties and localities. To assure growers of fair prices in the long run, any plantings should be carefully planned.

During the next few years we will probably experience an overproduction of some red varieties, particularly of the Alicante Bouschet, and perhaps a small underproduction of certain dry, white wine grapes. The best dry-wine grapes in the state are produced in the cool coast counties of Mendocino, Sonoma, Napa, and Santa Clara and certain localities in other counties contiguous to the San Francisco Bay. Before Prohibition red and white dry wines from these counties were in considerable demand. Present indications are, however, that it may take several years to revive as great a demand for good commercial dry wines in this country as existed before the War. Plantings of grapes in those localities which produce dry-wine grapes of excellent quality but of low

yields per acre should be made with caution until better indications are available regarding future demand for good, commercial dry wines in this country.

Much of the demand for commercial dry wine that existed before Prohibition may now be supplied by homemade wine, for it seems probable that many persons will continue to make wine for their own consumption as they did during Prohibition. At the prices that have prevailed for California juice grapes in eastern markets in recent years, those who drink the largest quantities of dry wine, chiefly the southern European element in our population, can themselves make ordinary red, dry wine for less money than they can buy it in bulk. Judging largely by California juice-grape shipments to eastern markets, it appears that about 25,000,000 gallons of wine were made in homes in each of the last two years. Probably most of this was dry wine, but some believe that a considerable quantity of it was sweetened. The large amount of homemade dry wine consumed in the United States during the past year helps to explain why sales of California commercial, fortified sweet wines have greatly exceeded sales of commercial dry wine. From the rough estimates of apparent consumption of commercial and homemade wine in the United States during the past year, it would appear that somewhere near the same proportion of dry and of fortified sweet wine was consumed as during the pre-Prohibition period 1909-1913.

Preliminary estimates (November 1) indicate that the 1934 crop of strictly wine-grape varieties was the largest produced in California in the last four years, amounting to 442,000 tons as compared with 420,000 tons in 1933, 388,000 tons in 1932, 316,000 tons in 1931, and 486,000 tons in 1930 (the largest crop since the War). Yields per acre were 2.4 tons for the state as a whole in 1934 or nearly the same as the average for the last eight years, but possibly slightly less than might be expected with normal weather conditions for the state as a whole and reasonable control of pests and diseases. Although the declining trend in yields per acre of wine grapes during the past decade makes it difficult to forecast what normal yields are likely to be during the next few years, about 2.4 tons per acre seem probable. With such yields, our present bearing acreage of wine-grape varieties would produce about 450,000 tons of grapes as compared with an average of about 400,000 tons during the last four years. Besides the tonnage of strictly wine-grape varieties produced in the state during the next few years, a considerable quantity of table and raisin grapes will normally be available for wine and brandy making, some of which might otherwise not be utilized because of the probable lack of demand from consumers with inadequate purchasing power.

Although the bearing acreage of wine-grape varieties in California

reached a peak in 1929, it has declined less than 4 per cent since then. Approximately 194,000 bearing acres were in the state in 1929 and about 188,000 acres in both 1933 and 1934. Less than 1,000 acres were reported as not yet in bearing in 1934, exclusive of plantings that were made during the winter of 1933-34.

Interstate movement of the strictly wine-grape varieties in 1934 totaled about 10,350 carloads as compared with about 9,000 carloads in 1933. Fresh Muscat shipments amounted to nearly 2,000 carloads, as compared with about 3,900 in 1933. Including the small quantity of other varieties of juice stock, interstate shipments of all juice stock totaled about 13,100 carloads in 1934 or almost exactly the same as in 1933. Juice-grape shipments from California were probably less than they would have been had the crop not matured too early to fit eastern demand best. Moreover, the good price for Muscat raisins and the active demand for fresh Muscats upon the part of California wineries probably reduced the quantity of these grapes shipped East.

Eastern auction prices of California black wine grapes averaged \$1.07 a package through November 3, or just about the same as the 1933 season's average of \$1.06. Prices paid by wineries in the San Joaquin Valley were also just about the same as in 1933 or about \$15 a ton for Zinfandel and possibly \$1 less for Carignane. Prices for these grapes were about the same in Napa, Sonoma, and Santa Clara counties, or approximately half of what such grapes brought in these counties in 1933. The small tonnage of white-wine-grape varieties was quickly disposed of at prices from about \$20 to \$25 a ton. Alicante Bouschet was in poor demand with prices from \$10 to \$12 a ton in both the San Joaquin Valley and the coast counties. Demand for the small Muscat crop for wine and brandy making was very active in the San Joaquin Valley, and the price probably averaged \$3 or \$4 a ton more than the 1933 price of about \$15 a ton. Eastern auction prices of Muscats through November 3, 1934, averaged \$1.10 a lug or \$0.11 more than the season's average for 1933. Because of decreased transportation rates, eastern shipments of Muscats and of black juice grapes probably returned growers in the neighborhood of \$5 a ton more in 1934 than in 1933.

Raisin Grapes.—Although commercialization of wine and brandy making since Repeal may result in permanent improvement in the demand for California raisin grapes for this purpose, expansion of the present acreage does not appear justified considering the poor demand for our raisins in both domestic and foreign markets in recent years, the probability of higher yields of raisin grapes in California than the abnormally low average of recent years, the prospects for large normal crops of raisins in foreign countries, and the high tariff duties and re-

strictions on imports of our raisins into important foreign markets. There may continue to be a somewhat greater demand for California raisin grapes for the commercial manufacture of sweet wine and brandy than existed before Repeal, but this demand may not continue to be as great after depleted stocks of sweet wine and brandy have been built up to normal requirements. Moreover, the marked rise in California raisin-grape prices during the last two years has been largely due to considerably smaller crops than may normally be expected from the present bearing acreage in the state.

The 1934 raisin-grape crop is the third abnormally small crop in the last four years, due largely to low yields per acre resulting from scarcity of water, excessive summer heat, and damage from leafhoppers. Preliminary estimates (November 1) indicate a crop of only 799,000 tons of raisin grapes as compared with 970,000 tons in 1933, 775,000 tons in 1931, and 1,221,000 tons in 1932. Yields per acre were only 3.4 tons in 1934 or fully 20 per cent below the 4.3-ton average of the preceding five years, indicating that the small crop was due primarily to low yields rather than to decreased bearing acreage.

With normal weather conditions and reasonable control of insect pests and diseases, the 233,000 bearing acres of raisin grapes in the state are capable of producing at least 4.3 tons of fresh grapes per acre, the average of the preceding six years, or normal crops of approximately 1,000,000 tons of raisin grapes—200,000 tons more than were harvested in 1934. Of this total tonnage an average of about 70 per cent of Thompson Seedless (Sultanina) may be expected, about 25 per cent of Muscat, and somewhat less than 5 per cent of other varieties.

Since the peak of raisin-grape production in California was reached in 1927, the bearing acreage of these grapes has decreased by about 100,000 acres or approximately 30 per cent. Since 1931, however, bearing acreage declined only 10,000 acres. It now approximates 233,000 acres or only about 1,500 acres less than in 1933. Very few raisin grapes have been planted in the state since 1927, and most of these have been Thompson Seedless vines. In 1927 only 2,000 acres were not yet in bearing, and the California Coöperative Crop Reporting Service estimates that now there are only about 100 acres. Removal of acreage due to old age, may, therefore, gradually reduce the bearing acreage during the next few years. Production, however, is not likely to decline materially unless yields per acre are exceptionally low on account of unfavorable weather and pests.

Partly because the 1934 raisin-grape crop was very small and partly because a great many raisin grapes, particularly the Muscat, were bought by California vintners for making wine and brandy, the 1934

dried raisin output of the state is the smallest since 1921. Official estimates of the tonnage of raisins dried in California are not available before January 1, but estimates by leading packers indicate that the total dried-raisin output of the state in 1934 was at least 150,000 tons. About 120,000 tons of these were Thompson Seedless, about 25,000 tons Muscats, and 5,000 tons other varieties. Since from 90,000 to 100,000 tons of old-crop raisins are estimated to have been on hand in California—sold and unsold—on September 1, it appears that about 250,000 tons of California raisins were available for the marketing season beginning September 1, 1934, the smallest quantity in sight in recent years. California raisin supplies in sight on September 1, 1933, amounted to about 300,000 tons, of which about 195,000 tons were harvested in 1933 and about 105,000 tons were old-crop raisins on hand September 1, 1933.

Movement of California raisins into both the domestic and foreign markets during the season beginning September 1, 1933, was less than the average of recent years, amounting to only about 190,000 tons (sweat-box basis), as compared with an average of about 210,000 tons during the preceding four years. It is roughly estimated, however, that an additional 15,000 tons of Muscat raisins were probably taken by California distillers for making brandy during the 1933–34 raisin marketing season. Domestic consumption during 1933–34 was next to the smallest since 1921, amounting to only about 143,000 tons as compared with 152,000 tons for the preceding four years and 131,000 tons for the 1931–32 season.

Exports to foreign countries, including Canada, during the 1933–34 season were only 52,500 tons (sweat-box basis), the smallest in nine years. The average for the preceding four years was 64,700 tons. Considering the competition we are likely to meet from foreign raisins and the high import duties into important foreign markets, the annual movement of California raisins into regular market channels at home and abroad for several years probably may not average any more than it has during the last five years, even with considerable improvement in business conditions and in the monetary situation.

Because of the very short California raisin crop, the 1934 world commercial output of raisins was between 15 and 20 per cent below normal, or between 320,000 and 330,000 tons. To this, however, must be added the large supplies of old-crop raisins carried over in California. World production of raisins and currants combined appears to have been about 500,000 tons in 1934. Foreign production of both raisins and currants is tentatively estimated to be about 10 per cent above normal with raisin output about 200,000 tons and currants about 170,000 tons. Fortunately for California, both Australia and Turkey, the countries from

which we meet the most direct competition in the United Kingdom—our best foreign market—harvested smaller crops than in 1933. The Australian raisin crop harvested in 1934 was about 18,000 tons less than in 1933 and the biggest part of this decrease was in sultanas, the kind of raisin with which ours largely compete in foreign markets. However, this decrease in production was offset by the large carryover of old Australian raisins in the United Kingdom in the spring of 1934.

During the last decade normal production of raisins in foreign countries has been increasing but not as rapidly as California production has decreased. As a result, average world production of raisins during the last three or four years of nearly 400,000 tons has been about 40,000 or 50,000 tons below the 1926–1928 average, when California production was at its peak; and the proportion of total world raisin production contributed by California has declined from 60 per cent to about 50 per cent. World production of currants has decreased by about 20,000 tons since 1926–1928, so that a normal crop is now about 150,000 tons. The combined world total of both raisins and currants now normally appears to be roughly 550,000 tons of which between 70 and 75 per cent are raisins.

The expansion of raisin production in foreign countries during the last decade has resulted in increased competition with California raisins abroad, and this competition is likely to be as keen, or even keener, during the next few years. California has felt the effect of increased foreign production upon her export market very directly because most of the increase in foreign production has come from Australia and Turkey, both of which export large quantities to Great Britain, which is our best export market too.

In order to sell abroad as many raisins as in recent years, our export prices will probably have to continue to be low, not only because of the normally large foreign crops in prospect, but also because of lessened demand for our exports in some of our most important foreign markets, partly as a result of the depression and partly as a result of trade restrictions that substantially raise the price of our raisins to foreign consumers without a corresponding increase in price on raisins from countries receiving preferential treatment. With foreign exchange at par, California raisins must pay an import duty of 2.28 cents a pound into the United Kingdom and 3 cents a pound into Canada, while Australian raisins are admitted free of duty under British preference into both of these countries. With foreign exchange above par, as it has been recently, these import duties are even larger in terms of our dollar. As a result of this increased competition from Australian raisins in Canada since 1928 and an apparent decrease in the demand for all raisins in

that market recently, Canadian imports of California raisins have fallen from an average of about 20,000 tons (equivalent sweat-box basis) to an average of only about 6,000 tons for the last three crop years. A decade ago Canada normally imported 90 per cent of her raisins from California as compared with only about 40 per cent at the present time.

Packers' purchases of 1934 crop raisins from growers to date (November 26, 1934) are reported to have usually been at about the minimum price established by the Raisin Marketing Agreement—\$70 a ton for Thompson Seedless, \$65 for Sultanas, and \$60 for Muscats. These compare with about \$60 a ton for Thompson Seedless in 1933 and \$40 in 1932, and with \$40 to \$45 a ton for Muscats in 1933, which was about double the price paid for Muscats in 1932. The increase in prices over 1933 appears to be due primarily to the very small 1934 raisin output and, in part, to the strengthening influence of industry organization under a Raisin Marketing Agreement. However, the influence of a short raisin crop on prices was partially offset by the large carryover of old-crop Thompson Seedless raisins in California.

Shipments and prices of fresh raisin-grape varieties are discussed in the wine and table grape sections of this outlook report. Fresh Muscats are discussed in the wine-grape outlook because very few are used for table purposes but nearly all for making wine and brandy. Thompson Seedless are discussed in the table-grape outlook because almost all of the fresh movement is consumed for table purposes.

Table Grapes.—Although the demand for California table grapes is likely to show a gradual upward trend, it is questionable whether any expansion in bearing acreage is justified now. Potential normal production of table grapes from the present bearing acreage in the United States, together with the Almeria grapes that may be imported from Spain since the recent change in quarantine regulations, appear sufficient to supply our market requirements for table grapes during the next few years and also a considerable quantity of low-grade table-grape varieties for commercial wine and brandy making in California.

The bearing acreage of table-grape varieties during the next few years will probably decline but slowly, and hence normal production is not likely to decrease materially for a few years. The bearing acreage of table grapes in California decreased from 140,000 acres at its peak in 1926 to 100,000 acres in 1931. The decline since 1931, however, has been small with 94,000 acres estimated as in bearing in 1934. Very few table grapes have been planted in recent years so that only about 700 acres in the state were estimated as not yet of bearing age in 1934.

The 1934 table-grape crop is the third abnormally small crop in the last four years, due largely to low yields per acre resulting from scarcity

of water, excessive summer heat, and damage from leafhoppers. The Tokay crop was especially small. Preliminary estimates (November 1) indicate a crop of only 266,000 tons of table-grape varieties (not including Thompson Seedless grapes produced for shipments as fresh table grapes) as compared with 270,000 tons in 1933, 317,000 tons in 1932, and 229,000 tons in 1931. Yields per acre were 2.8 tons in 1934 or about 12 per cent below the average of the preceding ten years, indicating that the small crop was primarily due to low yields rather than to decreased bearing acreage. With normal weather conditions and reasonable control of insect pests and diseases, the 94,000 bearing acres of table grapes in the state are capable of producing 3.2 tons per acre, the average of the last ten years, or normal crops of at least 300,000 tons. Such a quantity of table-grape varieties will probably be ample for market requirements during the next few years both for table purposes and for wine and brandy manufacture, particularly if any considerable tonnage of table grapes is imported from Spain now that the quarantine against their entrance has been lifted.

Shipments of table-grape stock from the state through November 23, 1934, including Thompson Seedless amounted to about 14,200 cars, as compared with about 12,700 through the same date in 1933. However, the movement of table grapes started so much earlier in 1934 than in 1933 that total shipments for the 1934 season will not be so much greater than in 1933 as these figures seem to indicate. About 800 cars of table varieties, nearly all Malagas, were shipped as juice stock in 1934 as compared with about 250 cars in 1933. Interstate shipments of each of the more important table varieties in 1934, as compared with 1933 were approximately as follows: 4,200 carloads of Thompson Seedless in 1934 and 3,300 in 1933; 3,800 carloads of Tokays in 1934 and 4,000 in 1933; 3,000 of Malagas (including juice stock) as compared with 2,200 in 1933; and nearly 600 carloads of Red Malagas or double the corresponding movement in 1933.

Improved demand for California table grapes in 1934 over 1933 is indicated by the fact that although more table grapes were shipped this year than last, eastern delivered auction prices of these grapes, including Thompson Seedless, averaged \$0.14 a package more for the 1934 season through November 3, than for the 1933 season as a whole. As a result of higher prices in the East and decreased freight rates, it appears that eastern auction sales returned growers at least \$16 a ton more in 1934 than in 1933. Malagas averaged \$1.17 a package in eastern auction markets (through November 3) in 1934 as compared with \$1.14 for the whole 1933 season, while Tokays brought \$1.35 in contrast to \$1.18 in 1933, and Thompson Seedless averaged \$1.52 a package through No-

vember 3, 1934, or \$0.10 more than the average for 1933. Wineries in the San Joaquin Valley paid \$11 or \$12 a ton for Tokays and Malagas during most of the 1934 marketing season or \$1 to \$2 more than in 1933.

PEACHES

Clingstones.—The peak of clingstone-peach production in California has been passed. With average yields, the annual production of No. 1 clingstone peaches (for canning) during the next several years may be expected to approximate 300,000 tons. Of an estimated total of 54,200 acres of clingstone peaches in California in 1934, 53,200 acres, or 98 per cent, are in bearing. The small nonbearing acreage is not likely to be sufficient to offset the normal removal of trees which have passed the period of profitable productivity.

The extremely unfavorable returns received by growers in 1931 and in 1932 resulted in the removal or abandonment of a very large acreage of clingstone peaches during the 1932–33 season. The incentive for additional large removals has disappeared for the time being. The relatively favorable prices paid for peaches in 1933 and again in 1934 have checked this tendency. As a matter of fact, the setting of young orchards has been stimulated.

It has been estimated that in 1934 over 65 per cent of the acreage of Tuscan, Midsummer, and Phillips Cling (the varieties now used for canning) are between nine and fourteen years of age. Approximately 12 per cent are fifteen years of age or over. With normal conditions, this latter group of trees will probably be removed within the next five years. The withdrawal from production of a large portion of the very large acreage between nine and fourteen years of age can be expected to take place between about 1940 and 1945.

The very limited supplies of available nursery stock did not permit the setting of as large an acreage of peaches during the 1933–34 planting season as growers were inclined to set. The incentive to plant during the 1934–35 season is great, and the supplies of nursery stock are more ample than a year ago. Although some setting of peach trees is justified, planting can be easily overdone. Since the present acreage is producing crops which are larger than are merchantable at satisfactory prices, some net reduction in acreage is desirable. The large acreage going out of production soon after 1940 will, however, warrant increasingly heavy plantings beginning about 1938.

In 1933, in accordance with a marketing agreement entered into by canners under the provisions of the Agricultural Adjustment Act, the price paid growers for No. 1 clingstone peaches was \$20 a ton on a har-

vested basis and \$15 a ton on an unharvested basis. In 1934 growers received \$30 a ton for No. 1 peaches sold to canners. Of the 1934 production 201,000 tons were canned commercially, approximately 12,000 tons were shipped fresh, and 20,000 tons were dried. A small portion of the unharvested production was later canned for relief purposes.

The carryover of canned peaches on June 1, 1934, amounted to 2,383,000 cases as compared with a carryover of 1,361,000 cases a year earlier. Total shipments of 9,287,000 cases were made during the 1933-34 season as against 9,922,000 cases in 1932-33. Canners' selling prices in 1933-34 averaged \$1.33 a dozen cans of No. 2½ Choice as compared with \$1.10 a dozen cans in 1932-33. Since August, 1934, prices on No. 2½ Choice have been about \$1.60 a dozen cans. The 1924-25 to 1928-29 average price was \$1.96 a dozen. According to the latest available information, canned pineapples are now selling at about 79 per cent of their 1924-25 to 1928-29 average price, canned apricots at 90 per cent, canned pears at 68 per cent, and canned peaches at 82 per cent. By assuming the 1924-25 to 1928-29 average relations of these prices as representative of the normal relative position of these canned fruits, peaches are now low in price in relation to canned apricots, high in price in relation to canned pears, and about on a par with canned pineapples.

Total exports of canned peaches in 1933-34 amounted to 1,799,000 cases. The comparable figures for earlier years are 1,733,000 cases in 1932-33, 1,469,000 cases in 1931-32, and an average of 1,845,800 cases during the preceding five-year period. The percentage of the total exported to the United Kingdom, our most important foreign market, has been very large in recent years. In 1933-34, 89 per cent of the canned peaches exported from the United States went to the United Kingdom. In 1932-33 this percentage was 91; in 1931-32, 88; and during the preceding five years, an average of 76.4. The decline in the value of the United States dollar in terms of English pound sterling has been a large factor in stimulating this export movement. The foreign exchange situation may be expected to continue to play an important part in the foreign market outlook.

Freestones.—Freestone-peach production in California has declined somewhat during the past fourteen years. During the five-year period 1921-1925, the average production amounted to 210,400 tons. Between 1926 and 1930, the production averaged 196,600 tons. Since 1931, an annual average of 185,500 tons has been produced. Available information indicates that this downward trend may be expected to continue during the next few years at least.

In 1934 the total acreage of freestone peaches in California amounted to 57,700 acres. Of this amount, 53,700 acres, or 93 per cent, were in

bearing and 4,000 acres, or 7 per cent, were nonbearing. It is not likely that this small nonbearing acreage will offset the acreage that normally will be taken out during the next few years.

Since 1921 the outlet channels for California freestone peaches have changed considerably. During the five-year period 1921–1925, 61 per cent of the harvested production of freestone peaches in California was dried; 26 per cent was shipped fresh; and 13 per cent was canned. Between 1926 and 1930, the percentage dried was 65; the percentage shipped fresh, 31; and the percentage canned, 4. During the three years 1931–1933, 61 per cent was dried; over 38 per cent was shipped fresh; and less than 1 per cent was canned.

Between August and October, 1934, packers' quotations on dried Choice Muir peaches averaged 8.6 cents per pound. Comparable prices in earlier years are 7.6 cents a pound in 1933, 4.7 cents a pound in 1932, and an average of 10.9 cents between 1921 and 1929.

Exports of dried peaches in 1933–34 amounted to 3,784 tons as compared with 3,825 tons in 1932–33 and an average of 3,980 tons during the previous five years. The percentage of the 1933–34 dried-peach production exported was approximately the same as the average for the preceding ten years.

Interstate shipments of fresh peaches from California in 1934 amounted to 2,030 cars. In 1933, 1,945 cars were shipped from the state; in 1932, 3,288 cars. Annual interstate shipments during the five-year period 1927–1931 averaged 3,330 cars. The prices of California Elberta peaches in eastern markets in 1934 averaged about 13 per cent higher than in 1933, 35 per cent higher than in 1932, and 2 per cent above the 1928–1932 average.

Supplies of fresh peaches in eastern markets during the 1934 California shipping season from states other than California were fairly large. Total carlot shipments of peaches from all such states during the two months of July and August in 1934 amounted to 15,115 cars as compared with 12,402 cars in 1933, 6,409 cars in 1932, and an average of 20,912 cars during the five years 1927–1931.

Available information indicates that the trend of peach production in the United States during the next few years will be slightly downward. In seven leading southern peach states the number of bearing trees has declined during the past few years. The present number is sufficient, with average growing conditions, to produce a crop of about 15,000,000 or 16,000,000 bushels. The very severe winter of 1933–34 killed many of the trees in the northeastern states and the production of the trees which did survive will most likely be greatly reduced.

For the country as a whole the producing capacity of orchards sup-

plying fresh peaches for market does not seem excessive and is likely to remain near the present level for the next four or five years. In Georgia, the leading southern peach-producing state, plantings have hardly been sufficient to replace trees going out of production, and indications are that a rather high percentage of the trees are well advanced in age.

PEARS

Even though Pacific Coast growers received excellent prices for their Bartlett crop in 1934, the industry will continue to need to control excessive production during the next few years whenever normal crops or larger are produced. The bearing acreage of pears on the Pacific Coast is still increasing so that further expansion of production and a continuation of burdensome surpluses may normally be expected during the next few years unless blight, black-end, economic difficulties, or some unexpected factor takes unusually heavy toll from the industry. The slow decline in bearing acreage and normal production of pears outside of the Pacific Coast area is not likely to help the market for the California Bartlett noticeably, since eastern pears are not directly competitive with the Pacific Coast Bartlett. The prospects for late varieties of pears during the next few years appear to be more discouraging than for Bartlett pears, for their normal production on the Pacific Coast will probably increase at a faster rate than the Bartlett during the next few years, and greater difficulties seem to be involved in increasing the demand for these varieties.

The California Coöperative Crop Reporting Service estimates that about 72,000 acres of pears were in bearing in the state in 1934 or nearly double that of ten years ago. Unofficial estimates indicate that about 44,000 acres were in bearing in Oregon and Washington in 1934. About 8,400 acres are not yet in bearing in California and nearly as many in Oregon and Washington combined. Although at least 10,000 acres of California pear trees, mostly the Bartlett variety, have been abandoned or pulled since 1929, largely as a result of the blight epidemic of 1930, still further reduction in Pacific Coast acreage is needed. Growers whose orchards usually produce low yields or inferior quality of pears will find it to their advantage to remove such acreage, for there is sufficient good acreage to supply market requirements whenever yields are close to normal. It still appears that the industry will have to suffer a few more years of low prices, like those of 1932 and 1933, before any substantial decrease in acreage may be expected.

Preliminary estimates (November 1) indicate a United States pear crop of about 560,000 tons for 1934, as compared with an average of

about 545,000 tons (harvested and unharvested) for the preceding five years. Production of the three Pacific Coast states in 1934 of about 390,000 tons is close to the average of the past five years and constitutes nearly as much as the average of about 70 per cent of the national total contributed by these states in recent years. Oregon and Washington together produced an average of about 158,000 tons of pears during the five years 1929–1933 or nearly 30 per cent of the United States total. Their output in 1934 appears to have been 156,000 tons or about 28 per cent of the total.

California production has averaged 228,000 tons during the last five years or nearly 42 per cent of the country's total. The state output in 1934 of 234,000 tons constitutes the same percentage of the national total as the preceding five-year average. Very little of the 1934 crop was not harvested or wasted. However, in 1933, of a crop of 221,000 tons, about 40,000 tons were unharvested. During the four years, 1930–1933, state production averaged 237,000 tons a year of which 200,000 tons were harvested and about 37,000 tons, or nearly 16 per cent, were unharvested. The largest crop in recent years was the 272,000 tons produced in 1930 with average yields of 4.2 tons per acre, in spite of the blight epidemic during that year. Yields in 1934 were about 3.3 tons per acre or only about 6 per cent less than the ten-year average of 3.5 tons. During the last ten years yields per acre have fallen below 3.1 tons in one year only, 1929, and that was because of spring frosts.

Whether average yields per acre will remain about the same as the average of the past ten years is uncertain because two important changes working in opposite directions are taking place in the industry. On the one hand, as the young bearing acreage comes into heavier bearing, yields per acre are tending to increase. Since approximately one-half of the present bearing acreage has been in bearing only about ten years, the potential increase in yields per tree from a long-lived, slow-growing tree like the pear is significant. On the other hand, if growers have to practice drastic economies in cultural operations in order to make both ends meet, average yields per acre may not increase. Although the net result of these two counteracting influences on yields per acre cannot be predicted with accuracy, there is little doubt that normal yields of about 3.5 tons per acre or normal crops of about 250,000 tons may be expected from the present bearing acreage, unless serious blight epidemics or other unforeseen events occur.

Canning Bartlett's.—In California, Bartlett pears for canning brought the highest prices in 1934 of the last five years, averaging about \$35 a ton for all grades or about \$18 a ton more than the average of the preceding three years. Prices in the Pacific Northwest were also high,

averaging between \$25 and \$30 a ton for all grades. No. 1 canning Bartletts generally sold at about \$35 a ton in Santa Clara, Napa, and Sonoma counties, while in Sacramento, Lake, and Mendocino counties they brought from \$40 to \$45. In the Pacific Northwest canning-Bartlett prices strengthened during the harvest season, averaging about \$30 a ton for No. 1 pears. The small tonnage of No. 2 pears utilized for canning in both California and the Pacific Northwest brought about half the price of No. 1 pears. Average returns for all grades of Pacific Coast canning Bartletts in 1934 appear, therefore, to have been between \$30 and \$35 a ton or about \$15 a ton more than in 1933.

Optimism on the part of canners regarding the market outlook for canned pears appears largely to account for the high prices paid for canning Bartletts in 1934. The following are the chief facts accounting for this optimism: the unusually large movement of canned Bartlett pears during the 1933-34 season; the small carryover on June 1, 1934; the probability of limited canned packs of peaches, pineapples, and apricots, with consequent relatively higher prices for these than for canned Bartletts, the high prices being paid for the fresh California Bartlett in eastern markets; and the keen competition among canners early in the season for Sacramento River pears.

The high price paid for canning Bartletts in 1934 resulted in the largest pack ever canned on the Pacific Coast and the largest supply ever available for one marketing season, even though the June 1, 1934, carryover of 273,000 cases from the preceding year's pack was the smallest of the last six years. The available supplies were about 1,000,000 cases greater than have ever been sold in one year. The 1934 pack is estimated by the trade to have been between 5,000,000 and 5,500,000 cases, of which California contributed about one-half. The largest pack of previous years was that of 1933, amounting to about 4,400,000 cases (equivalent of 24 No. 2½ cans). Supplies available for the 1933-34 marketing season were slightly more than 4,800,000 cases and shipments were nearly 4,600,000 cases, the largest movement yet experienced in a single year.

Pacific Coast canners reported an average selling price of \$2.64 a case for Bartlett pears during the year beginning June 1, 1933, as compared with \$2.48 for the 1932-33 season and \$2.82 for 1931-32. The 1933-34 price of \$2.64 is approximately 39 per cent less than the average selling price of \$4.35 for the three years 1926-27, 1927-28, and 1928-29. Canned apricot prices declined by just about the same percentage from 1926-27 through 1928-29 to 1933-34 as canned pears, but canned pineapple prices declined only about 20 per cent during this period and canned peaches, which appear to be the chief competitor of canned pears, de-

clined about 31 per cent. During the three years 1926-27 to 1928-29 canned pears averaged \$4.46 a case and canned peaches \$3.34 in the domestic market, a difference of \$1.12 or nearly \$0.05 a can more for pears than for peaches. During the 1933-34 season, peaches averaged \$2.32 a case and pears \$2.72, a difference of only \$0.40 a case or less than \$0.02 a can. F.o.b. quotations in October, 1934, were \$3.30 a case for peaches and \$3.90 for pears, or a difference of \$0.60 a case. Although canned Bartlett prices this year have been relatively low as compared with other canned fruits, they are substantially higher than they were a year ago.

The large shipments of canned Bartletts during the 1933-34 marketing season were the result of a number of factors: the low selling price of canned pears, particularly as compared with prices of competing canned fruits such as peaches; an exchange rate between the dollar and the English pound sterling that had the effect of lowering canned-pear prices in the United Kingdom, our chief export market; and some increase in the purchasing power of consumers in both the domestic and foreign markets. It has been estimated that the purchasing power of urban consumers in the United States was about 10 per cent greater in 1933-34 than in 1932-33.

As a result of the United States' going off the gold standard in April, 1933, British importers were able to purchase our canned pears much more cheaply in 1933-34 than in 1932-33. In terms of dollars, the average export price of canned Bartletts was \$2.52 a case in 1933-34 or about 3 per cent higher than the average of \$2.45 in 1932-33. In terms of English pounds sterling, however, the 1933-34 price was actually about 26 per cent less than in 1932-33. A continuation of a foreign exchange situation like that of the past year will, of course, favor exports to the United Kingdom.

Fresh Bartletts.—Of the total of about 115,000 bearing acres of pears on the Pacific Coast, nearly 75 per cent are Bartlett. With the major exception of the Hardy (Beurre Hardy), varieties other than the Bartlett are harvested too late to compete with most California Bartlett pears. In California the 62,000 acres of bearing Bartlett pears in 1934 constituted slightly over 86 per cent of the bearing acreage of all varieties. In Oregon and Washington about 55 per cent of the bearing acreage is in Bartlett trees. Of about 69,000 acres of Bartlett trees in California in 1934, about 6,700 acres were not yet in bearing or approximately 10 per cent of the total, as compared with about 15 per cent of the 11,500 acres of other varieties of pears. In the Pacific Northwest the percentage of late pears still to come in bearing is also larger than for the Bartlett.

Rough estimates indicate that the average production of Bartlett pears on the Pacific Coast was about 300,000 tons during the years

1928, 1930, 1931, and 1932. Crops at least as large are normally to be expected for the next few years, of which California may produce about two-thirds, as in recent years. Rough trade estimates indicate that Pacific Coast Bartlett production in 1934 was about 280,000 tons or slightly larger than in 1933. Perhaps 190,000 to 195,000 tons of this total were produced in California but about 10,000 or 15,000 tons were not of merchantable quality.

Eastern delivered auction prices for the California Bartlett averaged about \$0.23 more a box in 1934 than in 1933 although the tonnage of Bartlett pears shipped from California was greater than in 1933. The average price in 1934 was \$2.52 as compared with \$2.29 in 1933. The big improvement in price reflects chiefly better consumer purchasing power together with the influence of orderly movement from California under the shipment-control program of the California Fresh Deciduous Tree Fruit Marketing Agreement. Improved returns to California growers also reflected lower transportation costs. Judging from the delivered auction average price for the season, interstate shipments of the California Bartlett brought growers about \$35 a ton in 1934 or about \$10 more than in 1933.

Late Varieties.—Prospects for late varieties of pears appear to be more discouraging than for the Bartlett, since normal production on the Pacific Coast will probably increase at a faster rate than Bartlett production during the next few years, and greater difficulties seem to be involved in marketing late varieties and in increasing the demand for them than in the case of Bartlett pears. Production has increased so rapidly that rail shipments of late pears from the Pacific Coast are now normally about four times as great as they were just after the War and, on the whole, larger than the consumptive capacity of domestic and foreign markets in recent years at prices that would return packing, transportation, storage, and marketing costs. Delivered auction prices of late varieties of California pears during the four years 1930–1933 indicate how unremunerative these varieties have been to growers. The average price of Comice, Bosc (Beurre Bosc), and Clairgeau (Beurre Clairgeau) was only \$2.08 a box as compared with \$2.34 for the California Bartlett. Sales of these same varieties for the 1934 season through November 9 averaged \$2.18 as compared with \$2.56 for the California Bartlett in the New York auction market.

With the percentage of late-pear trees still to come into full bearing larger than for the Bartlett, both in California and in the Pacific Northwest, a continuation of burdensome surpluses in normal crop years appears certain unless a surplus-control plan is put into effect which artificially curtails shipments or reduces the acreage. About one-third

of the late-pear acreage on the Pacific Coast is still either of nonbearing or of young bearing age.

PLUMS

The trend of plum production in California during the next few years will probably be slightly downward. With average yields assumed, annual production in the neighborhood of 60,000 tons may be expected.

Between 1919 and 1928 the bearing acreage of plums in California nearly doubled. In 1928, the high point, approximately 33,600 acres of plums were in bearing in this state. Since 1928, this acreage has been declining at the average rate of 150 acres a year. The total acreage of plums in California in 1934 amounted to 33,900 acres, of which only 2,200 acres, or 6.5 per cent, were nonbearing. This amount cannot be expected to be sufficient to offset the acreage which normally will be withdrawn from production.

The annual production of plums in California since 1926 has averaged 62,000 tons. Except for the abnormally low production of 40,000 tons in 1929 and the very high figure of 82,000 tons the following year, the production each year has been within 10 per cent of this average. The 1934 production has been estimated at 61,000 tons. Yields per acre were about average. The condition of the crop was 73 per cent of normal as compared with the 1921-1932 average of 74 per cent.

During the five-year period, 1929-1933, the average annual production of plums in California was 62,400 tons. Of this amount, approximately 4,800 tons were unharvested, 2,000 tons were canned, and the remainder were shipped fresh.

In 1934 interstate shipments of plums from California amounted to 3,924 cars. The comparable figures for earlier years are 3,362 cars in 1933, 3,894 cars in 1932, and an annual average of 4,255 cars during the five years, 1927-1931. Since shipments of fresh plums to eastern markets from other states do not usually reach those markets in large volume until the California shipping season has passed, California fresh plums compete very little with those produced elsewhere in the United States. In 1934 the average f.o.b. price of the eleven principal varieties of plums shipped from California was \$0.74 a crate as compared with \$0.70 a crate in 1933, an increase of 6 per cent. The increase in shipments of 17 per cent, accompanied by this price increase, indicates an improvement in demand conditions for California fresh plums in 1934 over 1933.

The 1933 canned pack of plums in California amounted to 114,000 cases. The pack in 1932 was 72,000 cases; in 1931, 95,000 cases; and during the five-year period 1926-1930, an average of 170,800 cases. Plums canned in the Pacific Northwest compete directly with those

canned in California. The 1933 pack of plums (including prunes) in the Pacific Northwest amounted to 848,000 cases. Except for the very large pack of 948,000 cases in 1929, this is the largest pack on record. As a result of the increased canning of plums and prunes in Washington and Oregon, the total pack on the Pacific Coast has risen from an average of 375,400 cases during the five years 1921–1925 to 887,800 cases for the 1929–1933 average.

The average opening price of California canned plums during the 1921–1929 period was \$1.93 a dozen cans of No. 2½ Choice (advertised brands). By 1932, despite progressive curtailments in the size of the pack on the Pacific Coast, this price had fallen to \$1.30 a dozen cans. The opening price for the 1934 pack of No. 2½ Choice plums was \$1.55 a dozen cans—\$0.15 higher than the 1933 opening price and \$0.25 a dozen cans above the very low 1932 figure.

PRUNES

Prospects for large world crops of prunes face the industry during the next few years whenever yields per acre are near average, while consumption in several important foreign markets will probably continue to be curtailed by high import duties and, in Germany, by serious restrictions on the amount of foreign exchange available for imports.

Because of yields per acre below normal, the last three California prune crops have been considerably smaller than the average that might reasonably have been expected from the large bearing acreage in the state. The October 1, 1934, estimate indicated a crop of about 170,000 tons, or nearly the same as the 182,000 tons produced in 1933 and the 172,000 in 1932. In comparison, production averaged over 207,000 tons during the years 1927–1931. Average yields during that period, however, were nearly 1.25 tons per acre, whereas the average of the last three years has been slightly less than 1.1 tons per acre, or just about the same as the state average for the years 1921–1926, when a smaller proportion of the acreage was of full-bearing age than at present.

Apparently, therefore, normal crops of California prunes during the next few years are likely to be somewhat larger than the crops of the last three years, since bearing acreage is declining but slowly. The peak of the bearing acreage of prunes in the state was not reached until about 1931, and there has been a decline of only about 3,000 bearing acres since then. About 5 per cent of the total acreage, or 9,000 acres, is not yet in bearing. More than 85 per cent of the bearing acreage is now over thirteen years of age, and hence capable of bearing heavy yields per acre in years when normal conditions govern productivity.

The October 1 estimate of the 1934 dried-prune crop of Oregon and Washington was about 32,000 tons as compared with only about 17,000 tons in 1933 and an average, during the years 1928–1932, of a little over 29,000 tons, which appears to be somewhere near the normal production to be expected from the present acreage. Low prices have discouraged new plantings in recent years so that bearing acreage as in California has started to decline. Changing weather conditions cause rather violent fluctuations in prune production in the Pacific Northwest. The 1929 crop, the largest ever produced, was about 58,000 tons; while the 1928 crop, the smallest since the War, was only 6,000 tons.

Preliminary estimates indicate the 1934 commercial dried-prune crop of the world to have been about 235,000 tons or about the same size as the 1933 crop and nearly equal to the 243,000 ton average for the preceding five years, 1928–1932. The decline in California production below 1933 was more than counterbalanced by the increased output in the Pacific Northwest in 1934, while European production appears to be about the same in 1934 as in 1933. All things considered, it appears that the world supply of standard prunes available for the 1934–35 marketing season was about the same as in 1933–34.

World consumption of all dried prunes during the season beginning September 1, 1933, appears to have been in the neighborhood of 225,000 tons or probably about 10,000 less than the previous year. Maximum consumption, in 1930–31, was about 255,000 tons. Although California shipped between 180,000 and 185,000 tons of prunes during the 1933–34 season, or nearly as many as in 1932–33, it appears that Germany carried more of these over into the present marketing season than she did the year before. The United States as a whole shipped about 200,000 tons of prunes during 1933–34, of which about 95,000 tons (equivalent unprocessed weight) or 47 per cent were exported and about 105,000 tons consumed in the United States.

United States exports of prunes from the 1933 crop were about 5 per cent greater than from the preceding crop. During the year beginning September 1, 1933, exports to foreign countries of all prunes (except those in fruit salad) totaled 96,869 tons (net declared weight), as compared with 92,208 during the preceding year. The average for the five years 1927–1931 was nearly 123,000 tons. The poor export demand for our prunes during the last two years reflects greater competition from Jugoslavian exports and the high tariffs, trade restrictions, and adverse economic conditions in several of our most important foreign markets. These same factors will probably continue to hold our export movement of prunes much below the 1927–1931 average. Apparently the chief reason United States exports of prunes for 1933–34 were greater than

in 1932-33, in spite of a substantial increase in our f.o.b. prices, was the fact that the increased price was completely offset by the lowering of the cost of our money to foreign buyers in terms of their money since we went off the gold standard in April, 1933. At present prices, exports during the current marketing season may be only about as large as those during the 1933-34 season unless improvement in demand in important prune markets like the United Kingdom, Canada, and France is sufficient to offset the expected decrease in German imports of our prunes.

The basic price the Federal-State Market News Service reports packers to have paid California growers for 1934 Santa Clara French prunes, $5\frac{2}{61}$ to the pound, strengthened from July through November, rising from $3\frac{1}{4}$ to 4 cents. This compares with a range of $3\frac{1}{2}$ to $3\frac{5}{8}$ cents for the 1933 crop and an average of slightly less than $2\frac{1}{4}$ cents basis for most of the 1932 crop. Actual prices to growers for 60's, a fairly representative size of French prunes, would be about 1 cent a pound higher than these base prices.

Packers' quotations indicate that the California f.o.b. price of $5\frac{9}{60}$ packed French prunes averaged about $5\frac{3}{4}$ cents during the 1933-34 marketing season, as compared with about $3\frac{1}{2}$ cents during the 1932-33 season. Packers' quotations on 50/60 packed Santa Clara prunes rose rapidly from a post-war low of $2\frac{3}{4}$ cents a pound in August, 1932, to 6 cents in August, 1933. They reached a peak of $6\frac{1}{2}$ cents in March but declined steadily thereafter to about $5\frac{1}{4}$ cents in August, 1934. They had risen to $5\frac{1}{2}$ cents in November.

Foreign Situation.—During the last three years there has been a marked increase in Jugoslavian exports of dried prunes over the movement for the preceding three years, and exports will probably continue nearer the 28,000-ton average of the past two years than around the 10,000-ton average of the years 1929-1931. Exports from the 1930 and 1931 crops were only 9,500 tons, but they rose to 30,000 tons from the 1932 crop and amounted to about 26,400 tons in 1933. Unofficial forecasts in August indicate that exports of dried prunes from the 1934 crop may be slightly larger than for the preceding year.

The decline in production and exports of Jugoslavian prunes during the decade ending in 1931 was caused chiefly by the loss of many trees and greatly reduced yields per tree resulting from the rapid spread of brown apricot scale (*Lecanium corni*). Moreover, unfavorable weather conditions also reduced yields for a few years just prior to 1932. From 1922 to 1931 the number of prune trees in Jugoslavia declined from about 60 million to 39 million. More than 12 million old and diseased trees were uprooted by government order between 1929 and 1931.

However, about 1 million young trees were planted at that time and

a number of factors have led to a continuation of plantings since 1931. The government is encouraging plantings by making it possible to buy improved nursery stock both from its own nurseries and from private nurseries that have received special grants of money to enable them to sell some of their stock at unusually low prices. Methods of orchard sanitation are being very widely taught and equipment for combating pests placed within reach of the peasant farmers. Improvement in the quality of dried prunes is being brought about by educating growers in the erection and proper use of effective, but simple, driers that can be cheaply constructed. A considerable number of the new plantings of prune trees have been made with the fresh-shipping outlet in view, so exports of dried prunes may not necessarily be expected to increase as rapidly as total production of all prunes. Through several of its departments the Jugoslavian government is promoting the exporting of fresh prunes by means of education regarding the growing, grading, and packing of fresh fruit; of credit for the Privileged Export Company; of better market news; and by obtaining better and cheaper transportation for fresh fruit.

In spite of the large acreage of prunes grown in Jugoslavia, the industry is not commercialized to any great extent. During the last two years of an average production of about 580,000 fresh tons of prunes, an equivalent of only about 140,000 fresh tons or 23 per cent were exported from the country as fresh and dried fruit and jam. In previous years the percentage exported was even less. Only a small part of the crop not exported is consumed locally in the form of fresh and dried fruit and jam, the bulk of it being used to make prune brandy. Dried-prune exports of about 28,000 tons a year utilized only about 15 per cent of the 1932 and 1933 crops of prunes produced in Jugoslavia, while fresh-prune exports of about 43,000 tons accounted for about 7 per cent, and plum-jam exports about 1.5 per cent.

Germany, for many years our most important export market, consumed about 30 per cent of the total tonnage of dried prunes exported from Jugoslavia during the last two years, taking about 9,700 tons from the 1932 crop and 7,500 tons from the 1933 crop. This tonnage constituted slightly over 25 per cent of Germany's total imports of prunes during the past two crop years, while imports from the United States averaged about 68 per cent of the total. The Jugoslavian government arranged for a quota of 8,000 tons of its 1934 crop prunes for import into Germany, of which at least 6,000 tons may be admitted at the special low import duty of 10 Reichsmarks per 100 kilograms.

Germany imported about 19,200 tons, or 21 per cent, of United States prunes during 1932-33, and 26,300 tons, or about 27 per cent, during

1933-34. However, about 9,100 tons were imported in August, 1934, and hence were really carried over into the present 1934-35 marketing season. This tonnage is the greater part of the 12,000 tons of United States prunes which is expected to meet German demand until about March, 1935. Under the German import-control system inaugurated September 24, 1934, it seems that some means of barter trade will have to be arranged if Germany imports any substantial additional tonnage of prunes from the United States. Present arrangements are relatively more favorable to the importation of Jugoslavian prunes than to ours.

Since the War both consumption of prunes in France and imports showed a marked upward trend until about 1931, while production and exports both declined slightly. Most of the increase in imports came from California, since the United States has been the source of at least 90 per cent of French imports in recent years. Production of prunes in France during the next few years is not likely to average any greater than in recent years. Consumption and imports, however, are not likely to continue at the high level of the 1930-31 and 1931-32 marketing seasons but nearer the average of the past two years. Consumption of prunes in France during the two years beginning September 1, 1930 and 1931, averaged over 32,000 tons of which about 25,000 tons or nearly 80 per cent were imported. During the last two years, 1932-33 and 1933-34, consumption has averaged only about 21,000 tons of which nearly 17,000 tons have been imported.

The doubling of French import duties on prunes in April, 1932, and the increase in the import tax from 2 to 6 per cent ad valorem is undoubtedly an important factor that has decreased imports. Large supplies of fresh fruits available in France in recent years may also have reduced dried-prune consumption. Although decreased value of our money since we went off the gold standard in April, 1933, favored imports into France, it was to some extent counteracted by increased f.o.b. prices for prunes in California and a decline in economic conditions in France.

During the five years 1928-29 through 1932-33 France took nearly 18 per cent of the total quantity of prunes exported from the United States to foreign countries. United States exports to France during the years beginning September 1, 1930 and 1931, averaged 23,390 tons, or about 17 per cent of the total exported. During 1932-33 they amounted to 21,600 tons, or about 23 per cent of the total, and in 1933-34 they fell to only 13,020 tons, or approximately 13 per cent of total exports from the United States. It now appears that consumption and imports of prunes in France during the present marketing season may be above those of 1933-34.

The French prune crop is estimated (October) at about 5,000 tons for 1934 as compared with 7,500 tons in 1933, which was close to the average of recent years. Production of prunes in France is characterized by rather violent fluctuations. The 1932 crop, one of the smallest in recent years, was only 2,500 tons, whereas the 1930 crop, the largest in recent years, was 17,000 tons.

GRAPEFRUIT

Burdensome supplies of grapefruit in the domestic market together with increased competition in the foreign markets are in prospect during the coming years. With 25 per cent of the grapefruit trees in the United States not yet in bearing and with 75 per cent of the bearing trees under fifteen years of age, the pronounced upward trend in production of recent years seems likely to continue; and excessive supplies appear probable in years when yields per acre are average or above.

The 1934-35 crop of grapefruit in the United States is now estimated at 19,662,000 boxes, the largest on record and 33 per cent larger than the average for the five years 1928-29 to 1932-33. By contrast, the total production of grapefruit in 1933-34 was 14,243,000 boxes or 4 per cent less than the average production for the same five-year period. The United States commercial production in 1933-34 amounted to 10,684,000 boxes as compared to a five-year average, 1928-29 to 1932-33, of 11,272,000 boxes and an average for the previous five years, 1923-24 to 1927-28, of 7,790,000 boxes.

The largest relative increase in production in the last ten years was in Texas. The 1934-35 crop is now estimated at 2,049,000 boxes as against 1,130,000 boxes in 1933-34 and an average of 1,457,000 boxes during the five years 1928-29 to 1932-33. Total acreage of grapefruit in Texas in 1934 was approximately 1,000 acres less than in 1933. It is estimated that 500,000 trees (including some trees other than grapefruit) were lost as a result of the storm of September, 1933. Plantings in Texas have been at a slower rate during the last two years than in the preceding five years. The 276,000 grapefruit trees, set out in the year ending March 31, 1934, may be compared with 402,000 the preceding year and 949,000 the year before that. At the present time 62 per cent of the Texas grapefruit acreage is of bearing age as compared with 53 per cent in 1933, 24 per cent in 1932, and 17 per cent in 1930. As the great majority of the Texas bearing trees are still relatively young, large future increases in production may be anticipated in the absence of crop and tree-destroying storms or freezes during the next ten years. The 1934-35 production of grapefruit in Texas was estimated on November 1 at 2,049,000 boxes as compared with 1,130,000 boxes in 1933-34,

1,385,000 boxes in 1932-33 and a five-year average, 1927-28 to 1931-32, of 1,284,000 boxes.

California experienced the next largest relative growth in commercial production in this period, rising 263 per cent from an average of 255,000 boxes for 1923-24 to 1927-28 to 925,000 boxes for 1928-29 to 1932-33. That increase was roughly proportionate to the growth in acreage. Thus, in 1924 the bearing acreage in the state was but 4,205 acres, by 1929 there were 9,138 bearing acres, and in 1934 this had further risen to 15,300 acres. Meanwhile the nonbearing acreage was 41 per cent of the total grapefruit acreage in the state in 1924, 36 per cent in 1929, and 23 per cent in 1934. Bearing acreage in California increased 9 per cent from 1933 to 1934 and with the increase of 2 per cent in nonbearing acreage (exclusive of 1934 plantings), at the present time 77 per cent of the total acreage is of bearing age. Shipments of California grapefruit from November, 1933, to October, 1934, were 1,661,000 boxes. This was the largest quantity produced in the history of the industry in this state and exceeds the previous maximum year's shipments, 1931-32, by 447,000 boxes. The combined nonbearing acreage of California and Arizona in 1934 was estimated to be 10,000 acres or 32 per cent of the total grapefruit acreage in those two states. Substantial increases in production in this area may thus be expected in the near future.

As a result of the enlarged production of grapefruit in Texas, California, and Arizona in the past ten years, Florida's share of the total commercial production declined from an average of 93 per cent from 1923-24 to 1927-28 to 78 per cent in the following five years. During this same period, however, Florida's commercial production increased 21 per cent from an average of 7,240,000 boxes in the former period to 8,760,000 boxes in the latter period. In 1933-34, commercial production in that state amounted to 7,500,000 boxes, and the November 1 crop estimate for 1934-35 commercial production was 11,000,000 boxes or 26 per cent more than the average for 1928-29 to 1932-33. Florida's total acreage of grapefruit in 1934 was 94,000, an increase of 4 per cent from a year earlier. Of this total, 89 per cent were bearing as compared to 91 per cent in 1933, 90 per cent in 1932, and 55 per cent in 1930. As the large number of trees planted within the past ten years come into their full-bearing period, increases in production will occur barring heavy losses from frosts or storms.

The canning industry is an important market outlet for grapefruit. About 20 per cent of the 1933-34 Florida grapefruit crop was canned as grapefruit hearts or juice. From 1925-26 to 1930-31, canning of grapefruit hearts increased nearly six-fold to 2,412,000 cases of 24

No. 2 cans. Then it declined to about 900,000 cases in 1931-32. In each of the last two seasons the pack of grapefruit hearts was about 2,200,000 cases. The Florida pack of canned grapefruit (both hearts and juice) in 1933-34 was estimated to be 2,795,000 cases of No. 2 cans, as compared with 2,888,000 cases in 1932-33, and an average of 1,964,000 cases from 1928-29 to 1932-33. Some canning and processing of grapefruit is developing in Texas, but as yet the pack there is only a small percentage of that produced in Florida.

With the large increase in domestic production of grapefruit in recent years have come significant changes in the quantity of fresh grapefruit received from Puerto Rico and in the import and export trades. Receipts from Puerto Rico declined 36 per cent from the average of 738,000 boxes for 1923-24 to 1927-28 to the corresponding average of 473,000 boxes for the succeeding five years. In 1933-34, 439,000 boxes were shipped from Puerto Rico to this country.

Imports of fresh grapefruit have been of minor consequence in the last fifteen years. From 1923-24 to 1927-28 an average of only 173,000 boxes was imported from foreign countries. In more recent years such imports have been even smaller, averaging 114,000 boxes from 1928-29 to 1932-33; and in 1933-34 they were 55,000 boxes, more than half of which was received in August, 1934, from Cuba. The tariff on grapefruit, which was raised to 1.5 cents a pound by the Tariff Act of 1930, has contributed to this decline.

The export trade has expanded since domestic production has been on the upward trend and imports have virtually disappeared. From 1923-24 to 1927-28, 499,000 boxes were the average annual exports of fresh grapefruit. In no year since 1928-29 have exports fallen below 800,000 boxes, and the average for the five years ending in 1932-33 was 1,033,000 boxes. In 1933-34, 992,000 boxes were exported. This growth in exports has been at an even faster rate than the increase in production. In other words, the export trade has been becoming an outlet for a larger portion of the domestic supply than formerly was the case. Thus 6.5 per cent of United States commercial production of grapefruit was exported on the average from 1923-24 to 1927-28, rising steadily from 3.7 per cent in 1923-24 to 9.8 per cent in 1927-28. From 1928-29 to 1932-33, the average rose to 9.1 per cent, reaching a peak of 10.2 per cent in 1930-31, and then declining to 8.2 in 1932-33. In 1933-34, 9.3 per cent of the commercial production was exported in the form of fresh fruit.

In addition to the fresh grapefruit exported, a large quantity of the grapefruit that is canned moves into export and this trade is increasing rapidly. Exports in 1933-34 amounted to 767,000 cases which is equiva-

lent to 27 per cent of the Florida pack of 2,795,000 cases (24 No. 2 cans) of hearts and juice. Practically all the exports went to the United Kingdom although small quantities went to a number of other countries; the most important of these was Canada, which took a little over 5,000 cases. Since a case of canned grapefruit is roughly equal to a box of fresh grapefruit, it can be seen that almost as much of the grapefruit crop was exported in the canned state as fresh. Taken together, the exports of fresh and canned grapefruit were equal to about 12 per cent of the total 1933-34 United States grapefruit crop, and 16 per cent of the commercial production.

The United Kingdom in 1933-34 was the market for 55 per cent of the fresh grapefruit exported from the United States as against an average of 59 per cent during the years 1928-29 to 1932-33. Since November, 1932, there has been a British tariff of 10 per cent ad valorem for the months of December through March and 5 shillings per 112 pounds for the months of April through November on foreign grapefruit.

The Canadian market despite the import duty of \$0.70 a box, has continued to absorb between 30 and 40 per cent of United States exports of grapefruit, although the trend of this relative proportion has been slightly downward since 1926-27. When consideration is given to the actual quantities shipped both to the United Kingdom and to Canada, which have accounted for about 95 per cent of the United States exports in the last ten years, it is apparent that their existing tariffs have not as yet seriously curtailed the volume of United States fruit disposed of there. The assurance of Imperial tariff preference (grapefruit produced within the British Empire are not subject to any tariff on entering the United Kingdom or Canada), however, has vastly stimulated the grapefruit industry in South Africa and Jamaica. In 1930, 40 per cent of the 244,110 grapefruit trees in South Africa were nonbearing. Since then plantings have been very heavy so that a sharply upward trend in production is in prospect. Exports in 1933-34 from the Union of South Africa were 275,000 boxes as against an average of 131,000 boxes from 1929-30 to 1931-32. A similar situation exists in Palestine where the 1933-34 exports amounted to about 500,000 boxes as compared with an average of 75,000 boxes from 1929-30 to 1931-32. Palestine's grapefruit have been becoming a steadily larger part of the supplies in the markets of the United Kingdom. In 1929-30, for example, the 7,000 boxes of Palestine grapefruit imported by the United Kingdom comprised only 1 per cent of the total. In 1932-33, 17 per cent of British imports or 207,000 boxes came from that source. Although Palestine is a British mandate, exactly the same duty applies to grapefruit entering the

United Kingdom from Palestine as to shipments from the United States. Grapefruit from the United States, Puerto Rico, and Cuba arrive in Great Britain the year around. Palestine and Jamaica supply important quantities during the winter months with lesser quantities from Trinidad, British Honduras, Honduras, Spain, and Italy. South Africa, Brazil, Southern Rhodesia, Portuguese East Africa, Australia, and Argentina supply grapefruit throughout the warmer months. Competition for United States grapefruit in the export markets may be expected to increase for at least a decade, since world grapefruit production is sharply upward.

The average f.o.b. price received for California grapefruit shipped from November, 1933, to April, 1934, was \$1.50, which was virtually the same as the price of \$1.49 received in 1932-33, and somewhat less than the \$1.66 in 1931-32. The f.o.b. price of summer grapefruit, shipped from July to September, 1934, of \$2.47 was the same as that of a year earlier and compares with \$2.16 in 1932 and \$2.14 in 1931. The 1934 shipments of California summer grapefruit (in July, August, and September) totaling 445,000 boxes were the largest on record and may be compared with the average shipped in those same three months from 1929 to 1933 of 265,000 boxes. Florida shipments were 50 per cent of the quantity shipped in 1933, while receipts from Puerto Rico were only 80,000 boxes.

LEMONS

Above-normal temperatures, which have prevailed in the principal lemon markets of the United States over the past five years, coupled with judicious marketing practices, have made possible the sale of heavy shipments at relatively high prices. During this period, however, a potentially serious surplus condition has developed owing to large plantings in excess of usual replacement needs. Expansion both of bearing acreage and production is indicated in the near future. The occurrence of cool summer weather with its depressing effect upon lemon consumption would aggravate the difficulties of disposing of a still larger supply than that sold in recent years. Imports of lemons have been a negligible factor in the domestic market in the past four years; but if foreign production should increase, if the import duty should be reduced, or if exchange rates should become favorable to imports, the reappearance of foreign-grown lemons in American markets would still further complicate the problems of the California industry. Export markets are not at present an outlet for any considerable quantity of California lemons, which are there forced to compete with foreign

lemons without the benefit of the 2.5 cents a pound tariff which protects the United States market.

California lemon acreage in 1934, excluding 1934 plantings, was 48,900 acres. Of this, 42,000 acres or 86 per cent were in bearing and 6,900 acres or 14 per cent had not reached bearing age. As compared with the situation a year earlier, a net increase in bearing acreage of 1,300 or 3 per cent over the 1933 bearing acreage is apparent. Meanwhile, nonbearing acreage increased 600 acres or 10 per cent over the 1933 total for that class of trees. To obtain an adequate idea of the probable future trend of lemon acreage and production, it should be recalled that as recently as 1927 only 1,746 acres of nonbearing lemon trees were in the state, although at that time the bearing acreage was 41,475 acres or 525 acres less than that in 1934. From 1927 to 1931 an average net increase of 400 acres of nonbearing trees a year took place. However, between 1931 and 1934, this rate of increase was almost trebled and nonbearing acreage jumped from 3,554 acres in 1931 to 6,900 in 1934. As long as nonbearing acreage is maintained around 5,000 acres, an average of about 1,000 acres a year will be added to the bearing acreage. This is possibly double the actual requirements needed to replace removals of trees past their productive age.

Production of lemons in California increased rapidly from 1917 to 1926 as the new acreage planted between 1913 and 1918 came into full bearing. From 1918-19 to 1922-23, the average production was about 4,540,000 boxes; whereas in the following five years, 1923-24 to 1927-28, production averaged 6,200,000 boxes or an increase of 37 per cent over the preceding five-year average. In the ten-year period from 1918-19 to 1927-28, production increased at the rate of about 400,000 boxes a year. After 1927, the rate of increase flattened out and the average production from 1928-29 to 1932-33 of 6,820,000 boxes was 10 per cent larger than from 1923-24 to 1927-28. In 1933-34, 7,300,000 boxes were produced as compared with 6,200,000 boxes in 1932-33, and 7,000,000 boxes in 1931-32. The condition of the forthcoming crop on November 1, 1934, was estimated to be 80 per cent as compared with 73 per cent on November 1, 1933, and 73 per cent on the same date in 1932. For the next several years production is likely to increase moderately, but after that, barring sweeping removals of bearing acreage, production will again increase more rapidly as the relatively large amount of nonbearing acreage planted in the past five years comes into full bearing.

The declining imports of lemons into the United States continue to assist in compensating for the increased domestic production. At the same time, proximity to the market of the domestic supply, making possible well-timed marketing, linked with effective advertising efforts

have contributed to the decrease in volume of imports. In 1933-34, only 25,000 boxes were imported as compared with 145,000 boxes in 1932-33, and in no year since the Tariff Act of 1930 imposed a duty of 2.5 cents per pound on imported lemons have imports amounted to as much as 300,000 boxes. Imports in 1933-34 were the smallest on record and, were 95 per cent less than the average of 470,000 boxes imported from 1928-29 to 1932-33. In turn, that average was 56 per cent less than the average of 1,059,000 boxes imported in the preceding five years, and 72 per cent less than the average of 1,672,000 boxes imported from 1913-14 to 1917-18. Italy still supplies over 95 per cent of our imports.

Shipments of California lemons in 1933-34 amounted to 6,286,000 boxes. This constitutes the largest season's shipments in the history of the industry in California. It surpasses the previous maximum shipments—those of 1930-31—by 226,000 boxes and was materially larger than shipments in either 1932-33 (5,351,000 boxes) or 1931-32 (5,249,000 boxes).

Exports amounted to 230,000 boxes in the past year, an increase of 72,000 boxes over the 158,000 exported in 1932-33, and slightly more than the average exports from 1928-29 to 1932-33 of 227,000 boxes. Considering the fact that California lemons have had to compete in foreign markets with the foreign-grown lemons which the United States tariff excludes from the domestic market, the volume of exports has been well sustained in recent years. Even from 1923-24 to 1927-28, an average of only 5 per cent of California shipments was exported. In 1930-31 and 1931-32, as well as on the average 1928-29 to 1932-33, 4 per cent of the shipments went into the export trade, while for 1933-34 the corresponding figure was the same. Lemon exports, therefore, are still of relatively small importance. Very little change has occurred during the past seven years in the relative importance of the export markets for California lemons. Canada has taken the major portion (an average of 76 per cent) with minor quantities going to Japan (8 per cent), China (4 per cent), Philippine Islands (3 per cent), and New Zealand (3 per cent). Competition in foreign markets comes principally from the Italian lemons. Italy, the largest lemon-producing country in the world, is reported to have produced a crop of about 14,000,000 boxes in 1933-34—which is also the average size of crop for 1928-29 to 1932-33. The average annual production in Italy since 1928 has been 21 per cent higher than the average from 1925-26 to 1927-28. Competitive pressure from that source probably will prevent exports of California lemons from relieving the domestic market of the increased supplies which the present acreage situation indicates will be forthcoming in the next few years.

Since imports of lemons into the United States are practically non-existent at the present time, the domestic market can absorb more California lemons only (1) as the population of the United States increases, and (2) as more lemons per capita are consumed. Growth of population is currently much slower than in the 1920's, and at a rate of 3.6 pounds of lemons per capita it is estimated that the increase in population is likely to enlarge consumption of lemons by only about 45,000 boxes a year. This increase will not take care of the probable growth in lemon production, at least in the form of lemons. Disposition of an increasing quantity of lemons in some processed form appears to be inevitable.

A greater consumption of lemons per capita depends largely upon (a) merchandising efforts to broaden the market for and stimulate the use of lemons, and (b) the existence of warm weather in the consuming centers, which enlarges the demand for lemons. Advertising efforts, of course, are being made, but it is problematical whether they will be sufficient to offset the probable pressure of increasing production. Summer temperatures in fourteen of the main lemon markets have been considerably above normal for every year from 1930 to 1934, averaging 2.5 degrees Fahrenheit above normal. This contrasts with an average temperature for the preceding five years, 1925 to 1929, of 0.1 degree below normal. Since an indefinite continuation of unusually hot summer weather is extremely unlikely, it is reasonable to assume that cooler summers are in prospect with the consequent influence towards reducing per-capita lemon consumption. The repeal in 1933 of the Eighteenth Amendment is thought to have had a stimulating influence upon the use of lemons. In part, however, this has been compensated for by the increasing competition of limes.

It is significant that summer temperatures in the principal consuming markets in 1931 were the highest experienced in the last twenty-five years. The average temperature in 1933 was the third highest (next to 1931 and 1921) over the same period, and the average temperature in 1934 was surpassed only in those three years. The phenomenally large shipments in the past year were marketed at an average f.o.b. price received of \$3.62 as against \$3.43 in 1932-33. Shipments in 1933-34 were so arranged that the supplies of California lemons reaching the markets in the periods of hot weather were large enough to satisfy commercial requirements without entailing any material price increases.

ORANGES

Winter Oranges.—Increased shipments of winter oranges are likely to move from Florida, Texas, and Arizona provided unforeseen natural

events do not injure trees or fruit or both. California winter-orange shipments, however, probably will remain around the level of the average of the past several years, with the possibility of some increase from that level resulting from heavier Valencia-orange shipments in the early part of the winter season. Canada and the United Kingdom are virtually the entire foreign markets for winter oranges, and in them Imperial preferential tariffs will continue to favor imports from the rapidly expanding orange industry in various parts of the British Empire.

The volume of United States shipments of winter oranges in 1933-34 was the second largest on record. The 28,016,000 boxes shipped were 9 per cent in excess of the average of 25,811,000 boxes shipped during the preceding five years. That average in turn was 24 per cent larger than the average of 20,820,000 boxes shipped from 1923-24 to 1927-28.

Winter-orange shipments from California in the 1933-34 season were 12,577,000 boxes. This amounted to 4 per cent less than shipments in 1932-33, and 19 per cent less than those in 1930-31—the year of largest shipments to date. Shipments in 1933-34 showed a decrease of 11 per cent when compared with the five-year-average shipments of California winter oranges from 1928-29 to 1932-33. The decline since 1930-31 has averaged 983,000 boxes a year. In the same period the increase in shipments of Florida winter oranges averaged 414,000 boxes a year. California shipments in the winter season of 1933-34 amounted to 45 per cent of the total of 28,016,000 boxes shipped from producing sections of the United States. This unusually low percentage is to be contrasted with the average of 55 per cent of United States shipments originating in California for the preceding five years, 1928-29 to 1932-33. Nevertheless, the California shipments for 1933-34 were larger than those of any year from 1920-21 to 1929-30 with the exception of 1926-27 and 1928-29.

A number of factors account for the relatively smaller shipments from California in the past two years. The existence generally of dry, hot weather has contributed to the light sets of fruit in 1932-33 and 1933-34. This has meant that smaller crops were produced. There has also been some tendency to remove Navel orange trees, substituting Valencias, because of the higher returns realized on the latter in recent years. Bearing acreage of Navel and miscellaneous varieties of oranges in California in 1934 was reported to be 94,300 acres, a decline of 4,100 bearing acres from the 98,400 acres reported in 1933. This decline was partially offset by an increase of 1,300 acres in the nonbearing Navel acreage, exclusive of 1934 plantings, from the 1933 estimate of 4,200 to the 1934 estimate of 5,500 acres. At present about 96 per cent of Califor-

nia Navel orange acreage is in bearing. Since the nonbearing acreage is approximately enough for normal replacements, Navel orange production is likely to remain fairly constant, varying primarily according to climatic and cultural conditions. While the increasing supplies of late Valencia oranges will exert a pressure to extend shipments in the latter part of the season, the present policy of the industry is to curtail Valencia shipments so as not to interfere with the marketing of winter oranges.

The reported shipments of 15,048,000 boxes of Florida winter oranges in 1933-34 were 32 per cent greater than the five-year average of such shipments in 1928-29 to 1932-33 and were 9 per cent greater than the largest former year's shipments, 1930-31. A combination of influences brought about this record total of Florida shipments. There was the anticipated increase in production due to the attainment of full-bearing age by many young trees. Truck shipments were more completely reported and included in the statistics in 1933-34 than formerly was the case. Florida winter-orange shipments in 1933-34 amounted to 54 per cent of the total United States shipments. This was the first instance on record in which more than half of the United States shipments originated in Florida and compares with Florida's five-year-average shares of the total of 44 per cent, 1928-29 to 1932-33, and 42 per cent for the five years 1923-24 to 1927-28. Florida's nonbearing acreage in 1934 was estimated to be 34,000 acres or 13 per cent of the 263,000 acres of oranges and tangerines in that state. This may be compared with the reported 39,000 nonbearing acres in 1933, which were 15 per cent of the total of 260,000 acres in Florida at that time. Of the total bearing acreage about 60 per cent are less than fifteen years old. Most trees are receiving good care. Early oranges, marketed mainly from October to February, make up about 50 per cent of the total acreage with 15 per cent not of bearing age. Florida's late oranges, marketed mostly from March to July, comprise about 40 per cent of the acreage of which 13 per cent is not yet in bearing. Tangerines make up the remaining 10 per cent of the acreage. All of this leads to the conclusion that with average or better-than-average growing conditions, production of Florida oranges will continue the present upward trend for some time to come. The indicated commercial production of early and midseason oranges in that state for 1934-35 is 10,400,000 boxes as compared with 8,700,000 boxes in 1933-34, an increase of 20 per cent. The total crop of Navel and miscellaneous oranges in California in 1934-35 was forecast on November 1 as being 15 per cent larger than that of 1933-34.

Shipments of 318,000 boxes of winter oranges from Texas in 1933-34 were nearly four times as large as in 1931-32 when the peak of 83,000

boxes was reached, and were over five times the average shipments for the years 1929-30 to 1932-33. This occurred despite the severe losses from the storms of September, 1933, and constituted a relatively light crop in relation to the acreage in Texas. The estimated acreage of oranges in that state in 1930 was 20,600 acres, of which only 5 per cent were in full bearing. In 1934, there were 27,600 acres of orange trees in Texas, of which 74 per cent were in bearing. The rapid increase of bearing acreage there in the past ten years and the relatively large nonbearing acreage present a picture of large potential increases in future shipments provided, of course, that storms and hurricanes do not again reduce the acreage or the size of the crop, or both. The condition of the Texas orange crop on November 1, 1934, was reported to be 47 per cent as compared with 14 per cent on November 1, 1933. Production of oranges in that state in 1934-35 is estimated at 535,000 boxes, an increase of 37 per cent above the 390,000 boxes produced in 1933-34.

Arizona shipments in 1933-34 were 52,000 boxes or 6 per cent greater than those of 1932-33 and may be compared with the average for 1929-30 to 1932-33 of 41,000 boxes.

During the six months, November to April, 1933-34, exports of winter oranges totaled 1,406,000 boxes. While this exceeded by 15 per cent the 1,224,000 boxes exported in 1932-33, it was 16 per cent less than the 1,664,000 boxes which were the average exports for 1928-29 to 1932-33. Exports of winter oranges have been a fairly constant part of total United States shipments. Over the five-year period, 1928-29 to 1932-33, winter-orange exports were 6 per cent of total United States winter-orange shipments, while in 1932-33 and in 1933-34 they were 5 per cent.

Exports of winter oranges to Canada in 1933-34 amounted to 1,014,000 boxes. With the exception of 1932-33, this was the smallest quantity taken by that country since 1922-23; and it was 28 per cent below the average exports to Canada for 1928-29 to 1932-33 (1,413,890 boxes). In the "depression years" since the imposition of the Canadian import duty in 1931, Canada has absorbed a relatively smaller portion of our foreign winter-orange exports. Thus, in the five years 1927-28 to 1931-32, Canada took an average of 87 per cent of our total exports; in 1932-33, this declined to 81 per cent and in 1933-34 it declined still further to 72 per cent. Despite the fact that a tariff was placed on oranges shipped from the United States to the United Kingdom, the absorption by that country of 198,000 boxes of United States winter oranges in 1933-34 constituted 14 per cent of the total exports. This is to be compared with the average of 6 per cent of our total exports, 1927-28 to 1931-32, and is partly explained by the fact that early shipments of Valencia oranges took place in April, 1934. Nevertheless, our winter-orange exports are

seriously affected by the protective tariffs developed in the British Empire. Considering Canada and the United Kingdom together, we find that winter-orange exports to them averaged 93 per cent of total exports from 1927-28 to 1931-32, and that while in 1932-33 this outlet amounted to 91 per cent, in 1933-34 it had further declined to 86 per cent. Factors other than the tariff help to explain fluctuating United States exports to the United Kingdom. In addition to the influence of the condition of the consumers' buying power in British markets, the volume of production in and exports of oranges from countries which compete with United States oranges have a direct bearing on this point.

Spanish production and exports have declined in the past three years and Spanish oranges have been losing their predominant position in the British winter-orange market to Palestine and South Africa. Palestine, particularly, has been furnishing an increasing part of the winter oranges imported into the United Kingdom. In 1929-30, Palestine supplied 17 per cent of such imports; and since then this percentage has risen until in 1933-34, Palestine shipped 31 per cent of such imports. At the present time, shipments of Palestine oranges to the United Kingdom bear a tariff of 3 shillings 6 pence per 112 pounds from April 1 to November 30 and 10 per cent ad valorem for the remainder of the year. Although South African oranges are imported into the United Kingdom from November to April in much smaller quantities than in the summer months, their share of British winter-orange imports rose from 0.7 per cent in 1929-30 to 2.3 per cent in 1933-34.

Shipments from Puerto Rico to the United States have decreased to a negligible quantity. In the 1933-34 winter season they were only 15,000 boxes or 5 per cent of the average receipts from 1923-24 to 1927-28. A large portion of Puerto Rico's orange production is in small holdings or is allowed to grow wild. Consequently exports, mostly to the United States, are only important in years of high prices. Imports of oranges are practically nonexistent owing in part to the 1 cent a pound tariff which protects the markets within the United States tariff boundaries.

Despite the fact that shipments of winter oranges in 1933-34 were unprecedentedly large, the average f.o.b. price California, received for packed fruit shipped from November, 1933, to April, 1934, was about \$1.72 or 10 per cent higher than the average of \$1.56 in the preceding year. The operations of the marketing agreement which became effective in January, 1933, should be mentioned as preëminent among the influences responsible, as well as the improved buying power of consumers. The price of \$1.72, however, is considerably lower than the average prices of \$2.28 in 1930-31 and \$1.92 in 1931-32.

Summer Oranges.—A continuation of the rising trend of production

of Valencia oranges in California is in view. The overlapping of Florida oranges into the summer season is likely to become more pronounced as the size of the crop in that state follows the indicated increasing trend. In general, the summer-orange export market has absorbed a constant share of total United States shipments. Various forms of nationalistic economic policy, however, are restricting shipments to these markets. Under the stimulus of tariff preference within the British Empire, South African production of oranges is expanding rapidly. Nevertheless, Spain and Brazil continue to export to the United Kingdom the majority of the summer oranges consumed there.

The upward trend in United States production and shipments of oranges marketed between May and October continued in 1934 when 16,924,000 boxes were shipped. From 1924 to 1928 an average of 10,499,000 boxes of summer oranges was shipped. In the following five years, 1929 to 1933, the corresponding average had risen 59 per cent to 16,729,000 boxes. The past year's shipments represented an increase of 1 per cent above that average.

California shipments of summer oranges, mainly Valencias, amounted to 15,210,000 boxes in 1934. The average of such shipments from 1929 to 1933 was 15,072,000 boxes which represented a 54 per cent increase over the average of 9,776,000 boxes shipped from 1924 to 1928.

California Valencia orange acreage of bearing age was estimated in 1934 to be 118,800 acres or 5 per cent larger than it was a year earlier and 24 per cent more than in 1929. Simultaneously, however, nonbearing Valencia acreage in the state, exclusive of 1934 plantings, showed a decrease of 26 per cent from the 22,500 acres in 1933 to 16,700 acres in 1934. The present situation thus is that 88 per cent of the total Valencia acreage in California was of bearing age in 1934 as compared with 84 per cent in 1933. The large nonbearing acreage taken in conjunction with the small removals of Valencia trees indicates that, barring unforeseen natural events, production of Valencia oranges will continue on a rising trend although the rate of increase may be slower than in the past fifteen years.

Rapid as the increase in shipments of California summer oranges has been, the increase in Florida shipments in May, June, and October has been even faster in recent years. Thus, from 1924 to 1928, 93 per cent of the summer oranges shipped from producing sections in the United States originated in California. In that period, Florida shipped an average of 710,000 boxes of oranges each year between May and October. During the succeeding five years, 1929 to 1933, Florida's average shipments rose to 1,640,000 boxes, an increase of 131 per cent as compared with the 1924-1928 average. In 1933, a record-setting total of 2,919,000

boxes was shipped from Florida in the summer season. In 1934, 1,857,000 boxes were shipped. All of this has lowered California's share of total United States shipments of summer oranges to an average of 90 per cent from 1929 to 1933. As a result of the phenomenally large shipments from Florida in the summer of 1933, California's proportion of the total shipments in that year was 84 per cent; in 1934, it was 89 per cent.

Exports of summer oranges, including shipments to Canada, in the 1934 season totaled, 1,891,000 boxes as compared with 2,171,000 boxes in 1933 and 1,826,000 boxes in 1932. Although the export trade has declined materially in volume since 1929 when 3,386,000 boxes of summer oranges were exported, in every year since 1931 it has been much more extensive than in the five years, 1924 to 1928, when an average of 1,280,000 boxes were shipped out of the country. The increased volume of exports in recent years has maintained, at a fairly constant level, the relative share of the United States total summer-orange production which has moved into foreign markets. In general, exports are relatively less important to the California orange industry in years of short crops than they are when a commercial surplus exists. Such a surplus condition has made foreign markets a very necessary outlet for United States oranges in certain recent years. From 1924 to 1928 the average proportion of exports to total shipments was 12 per cent (annual figures varied from 11 per cent to 15 per cent); while in the five years ending in 1933, exports amounted to an average of 13 per cent of United States shipments (with a maximum of 17 per cent in 1929 and a minimum of 9 per cent in 1930). The proportion of total shipments exported in 1933 was 12 per cent and in 1934, 11 per cent.

The Canadian market for United States summer oranges in 1933 absorbed approximately the same number of boxes (1,020,000) that it did on the average from 1924 to 1928 (1,007,000 boxes). In the interim, however, the average exports to Canada from 1929 to 1933 of 1,232,000 boxes showed an increase of about 200,000 boxes owing to two years (1929 and 1931) in which such exports were unusually large. Despite this fact, Canada's share of exports of United States summer oranges declined from an average of 81 per cent of the total exports from 1924 to 1928 to 61 per cent for the five-year average, 1929 to 1933. In 1933 only 47 per cent of such exports were destined for Canadian markets. This means that the growing volume of United States summer oranges exported has more largely entered into other markets. The United Kingdom has been the outstanding example of this change. In 1933, the share of our exports going to the United Kingdom (35 per cent of total exports) was more than triple the proportion it took on the average from 1924 to 1928 (11 per cent). The average proportion shipped to this mar-

ket from 1929 to 1933 was 25 per cent. Exports of United States summer oranges to Canada and the United Kingdom combined have dropped from an average of 92 per cent of total exports from 1924 to 1928, to an average of 86 per cent from 1929 to 1933. In 1933, the corresponding percentage was 82 per cent.

Intensified nationalistic efforts in the form of higher tariffs and import quotas have generally handicapped shipments to foreign markets. In Germany these barriers were supplemented in 1933 by restrictions on the quantity of foreign exchange available to pay for imports. British Imperial preferential tariffs have been effective in Canada since 1931 and in the United Kingdom since 1932. These tariffs have worked to the advantage of South African oranges and have encouraged expansion of orange acreage there. Brazil, however, supplied 25 per cent of the British summer-orange imports in 1933, while Spanish oranges constituted a further 33 per cent. In 1934, these two countries furnished similarly important quantities to the United Kingdom. The outlook is for large further increases in Brazilian and South African production and exports.

The average f.o.b. price for packed fruit shipped from California from May to October, 1934, was about \$2.85 a box as compared with \$1.88 in 1933 and \$1.93 in 1932. The 1934 average f.o.b. price was the highest received since 1930. The increase of \$0.97 a box in 1934 as against 1933 was associated with the fact that total United States summer-orange shipments in 1934 were 1,737,000 boxes less than in 1933. The weighted average auction price per box at New York for California Valencia oranges for the 1934 crop was \$4.26. This, likewise, was materially higher than the corresponding averages of \$3.12 in 1933, \$3.41 in 1932, and \$3.97 in 1931.

While the extremely high temperatures which were experienced by many of the important middle western and eastern markets undoubtedly attracted additional consumer buying power to oranges, a major share of the credit for the increased prices realized must be given to the operations of the marketing agreement. Marketing agreements are likely to be more effective for summer than for winter oranges because of the high degree of control which one area (California) can exercise over the marketing policy. Fresh peaches and berries in 1934 offered less competition than usual because of frosts in the winter of 1933-34 followed by a generally dry spring and summer. To a smaller degree the same was true of pears, plums, and melons.

ALMONDS

Consumption of almonds in the United States has shown a significant decrease in each of the past four years. The greatest effect has been upon imported almonds which have been replaced in increasing amounts by the domestic-grown almonds. The 1933 and 1934 crops in California were considerably below normal and should be followed by heavier production in subsequent years when weather conditions are more favorable. For some years to come, almond production in California should fluctuate around the estimated present trend of approximately 13,500 tons a year.

The total acreage of almonds in California, the only state now having any commercial production, has remained practically constant during the past four years with an average of 75,400 acres. In 1934 the total acreage was 75,600, of which 72,600 or 96 per cent was bearing, and 3,000 acres or 4 per cent nonbearing. Since 1928 the bearing acreage has fluctuated between 70,000 and 72,500 acres, most of which was in full bearing in 1934. The nonbearing acreage steadily decreased until 1933, but the 1934 total was slightly higher than for the previous year. However, in 1934 the nonbearing acreage was but 37 per cent as large as the nonbearing acreage in 1928, and 24 per cent as large as that for 1927.

The 1934 production of California almonds is now estimated at 10,900 tons. This total is small when compared to a crop of 12,900 tons in 1933, which likewise was below normal, and to 14,000 tons in 1932 and 14,800 tons in 1931. The condition of the crop in 1934 was but 54 per cent of normal, the lowest, except for 1929, in the preceding thirteen-year period. The average for these thirteen years, 1921 to 1933, was 67 per cent of normal.

Prior to 1928 there was a marked upward trend in almond production in this state. Between 1919 and 1928 the average increase in the trend of production amounted to 900 tons a year. Since 1928 the trend of production has leveled off to a yearly average of approximately 13,500 tons. The 1933 and 1934 crops were considerably below the trend, but it is not believed that a new downward tendency is indicated. The bearing acreage is sufficient in normal years to maintain production at or near 13,500 tons. In any year, however, when weather conditions are favorable to high yields, production will be considerably above the trend; while in years of unfavorable weather conditions, production will fall below the trend.

Imports of almonds, both shelled and unshelled, showed a gradual downward trend until 1929-30. Thereafter, in the past four years the

drop in imports each year has been so large that California almonds have experienced less competition from them. In spite of the downward trend between 1921-22 and 1929-30, the volume of imports at the end of the period was still large in proportion to California production. Average imports during the two years 1927-28 and 1928-29 amounted to 600 tons of unshelled almonds and 8,897 tons of shelled almonds, or a total of 27,290 tons in equivalent unshelled. The average production of almonds in California in 1927 and 1928 amounted to 13,000 tons, making a total United States supply of almonds in equivalent unshelled of 40,290 tons, of which California contributed 32 per cent. During the past three years imports of unshelled almonds have been negligible—being but 5 tons in 1931-32, 72 tons in 1932-33, and 3 tons in 1933-34. Imports of shelled almonds likewise have dropped greatly, with a total of 3,965 tons in 1931-32; 2,317 tons in 1932-33; and 1,414 tons in 1933-34. The average during these last three years has been only 29 per cent as large as the average of 1927-28 and 1928-29 and 25 per cent as large as the average of 10,174 tons for the nine years 1921-22 to 1929-30. Total imports in equivalent unshelled during the three years 1931-32 to 1933-34 have averaged 7,723 tons a year, while in California production has averaged 13,900 tons. Thus, during the three-year period California contributed an average of 65 per cent of the United States supply of almonds, and in 1933-34, 75 per cent.

Import duties on almonds entering the United States, which in June, 1930, were increased from 14.00 cents a pound to 16.50 cents a pound on shelled almonds and from 4.75 cents a pound to 5.50 cents a pound on unshelled almonds, have been more effective in recent years in restricting competition from foreign supplies than formerly. This has resulted principally from the pronounced fall in wholesale prices in the United States during the past four years and from the decline since March, 1933, in the value of United States dollars in terms of French, Spanish, and Italian currencies.

In Mediterranean countries there has been no definite trend upward or downward in almond production during the past five years. Production of both shelled and unshelled almonds has fluctuated widely from year to year in each of the principal countries. The total production of shelled almonds in 1933 was 26 per cent higher than in the preceding year, 17 per cent higher than the four-year average 1929 to 1932, but 1 per cent less than 1929. Production of unshelled almonds likewise was almost equal in 1930 to the 1932 total and 20 per cent higher than the four-year average 1929-1932. In all probability, supplies available for exports to the United States will continue for some years to be as large as they were between 1926-27 and 1928-29 when United States imports

averaged 8,620 tons of shelled almonds and 480 tons of unshelled almonds. Actual imports during the coming years will depend not only upon the production in the Mediterranean Basin, but also upon the level of wholesale prices of almonds in this country, the amount of the import duty, and the exchange rate between the United States dollar and foreign currencies.

It is significant that the demand for almonds even in the relatively prosperous years from 1922 to 1929 showed no increase; and in recent years of reduced purchasing power, demand has dropped greatly. In 1921-22 and 1922-23 the total United States supply in equivalent unshelled averaged 46,304 tons, while in 1927-28 and 1928-29 this total had fallen to 40,290 tons, or a decrease of 13 per cent. After 1930, owing to decreased buying power and higher tariff duties, the available supply steadily diminished. The reduction in total supply up to 1928 was mainly responsible for the increase in prices to California growers from an average of 14.4 cents a pound during the years 1921 and 1922 to an average of 16.6 cents a pound in 1927 and 1928, an increase of 15 per cent.

During the past four years the demand for almonds in the United States has been materially below that which prevailed prior to 1929. In the three years 1931-32 to 1933-34 the apparent consumption of almonds in equivalent unshelled was but 55 per cent of the average from 1926-27 to 1928-29. Furthermore, the available supply has been steadily declining since 1929 because of a reduction in imports. In 1927-28, California contributed 30 per cent of the total supply of almonds for United States consumption. In 1930-31 this contribution had increased to 42 per cent and in 1933-34 to 75 per cent. Foreign almonds, therefore, have been replaced in increasing amounts by those produced in California although total consumption has diminished.

The almond industry at present is faced with increasing competition from domestic-grown walnuts and pecans. The trend of production of these nuts is steeply upward since less than one-half of their acreage is now in full bearing. Although the pecan crop in 1934 is estimated at only 70 per cent of the five-year average 1927-1931, the future will bring increased production and, consequently, greater competition.

WALNUTS

The trend of production of walnuts in both California and Oregon is rapidly increasing. While there has been a substantial removal of orchards in southern California in the past few years, the greater acreage of young trees coming into bearing in northern California and

Oregon has, and will, greatly offset the loss in production from uprooted orchards. The Walnut Control Board has estimated domestic demand for unshelled walnuts under present conditions at 500,000 bags, or 25,000 tons. With estimated potential production within the next few years at least 40,000 tons annually, growers will probably find their income reduced unless some plan to control distribution is continued in operation. Poor low-yielding orchards will be unable to pay all costs, and new plantings will be faced with severe competition.

The total bearing acreage of walnuts in California has steadily increased during the entire period of 1921 to 1934. The 1934 total was 113,000 acres in bearing and 16,900 acres, or 13 per cent nonbearing. In 1933, with a total of 133,700 acres, 23,000 or 17 per cent were nonbearing. From the latest available information furnished by the California Walnut Growers Association, 35 per cent of the walnut acreage in the state was in full bearing in 1933, 47 per cent young bearing, and 18 per cent nonbearing. In 1934 young bearing acreage increased slightly and nonbearing decreased. The greatest increase in acreage was in northern California, which in 1933 had 42 per cent of the total state walnut acreage. The largest part of the nonbearing acreage, likewise, was in northern California. This section, therefore, will provide the greater part of the increases in production in ensuing years.

In the last three years 4,046 acres of walnuts have been removed in southern California. The largest block—1,716 acres—was removed in 1931–32. This was followed in 1932–33 by 1,097 acres and in 1933–34 by 1,233 acres. Of the total removals in these three years, 76 per cent were seedlings and 24 per cent were budded varieties. Because of low prices received in recent years for other crops such as oranges, which might compete for the use of walnut land, there is less incentive at present to uproot walnuts in order to plant these other crops. While the majority of removals of walnut trees have been seedlings, nearly all new plantings have been of improved varieties, with yields per acre substantially higher than those of seedlings. Because of a large proportion of better-yielding varieties in the newer acreage, the average yield per full-bearing acre will probably tend to increase.

The trend of walnut production in California since 1925 has been upward at the rate of approximately 1,800 tons a year. Both the 1933 and 1934 crops have been below trend. The 1933 production of 32,000 tons was approximately 9,000 tons below the estimated trend, while 1934 production was 5,400 tons below trend. The 1934 estimated total, 38,100 tons, was higher than the average of 35,100 tons for the five years 1929 to 1933 and was exceeded only three times in the entire period 1921 to 1934. The 1934 crop condition is estimated at 68 per cent of normal

as compared to the twelve-year average, 1921 to 1932, of 76 per cent. In spite of poorer conditions in southern California this fairly large crop in 1934 was produced because the yield in northern California was the heaviest in history.

Since 1925 the trend of production in Oregon has been increasing at a rate of approximately 200 tons a year. Production in 1934 is estimated by the Walnut Control Board at 2,100 tons as compared to 1,000 tons in 1933 and an average of 1,540 tons for the five years 1929 to 1933. Further increases in production in Oregon can be expected in the next few years since approximately 50 per cent of the acreage is still non-bearing.

The United States per-capita supply of unshelled walnuts averaged 0.61 pounds for 1922-23 to 1929-30. During this period no change in the trend of consumption was in evidence. Prior to 1932 the supply corresponded with consumption for there was little or no carryover from one year to the next. In 1932-33, however, a carryover of approximately 14,000 tons, or approximately 0.22 pound per capita, was brought into the 1933-34 marketing season. Thus, although 1932-33 per-capita supply equaled 0.65 pound, the consumption was 0.43 pound which was in line with the decreased per-capita consumption which prevailed since 1929.

A marked decrease in imports of unshelled walnuts has occurred in the last four years. During the three years 1930-31 to 1932-33, an average of 1,885 tons was imported as compared to 5,311 tons for the preceding three-year period 1927-28 to 1929-30. In 1933 imports of unshelled walnuts fell off to 4 tons. Since 1930, reduced domestic buying power, the decrease in value of the dollar, the large domestic production, and the tariff of 5 cents a pound have been responsible for the virtual elimination of imports of unshelled walnuts.

Until the last two years, 1932-33 and 1933-34, imports of shelled walnuts have greatly exceeded domestic production. During the five years 1927-28 to 1931-32, the domestic production of shelled walnuts averaged 2,273 tons, or 23 per cent of the average total supply. In 1932-33 imports exceeded domestic production by 178 tons, while in 1933-34 domestic production was 399 tons greater than imports. The per-capita supply of shelled walnuts remained almost constant at an average of 0.19 pound during the entire period 1922-23 to 1929-30. In the last four years there has been a decrease to an average of 0.12 pound per capita.

The main source of income from walnut production in California has always been from the sale of unshelled walnuts in the domestic market. Shelling has been helpful in disposing of culls and that portion of the

merchable crop which the regular market would not absorb. Buyers of bulk shelled walnuts for the bakery and confectionery trades prefer medium-sized light-colored kernels. As a relatively high percentage of California walnut kernels is large in size and amber to brown in color, the California shelled walnuts have been at a disadvantage when competing with the better grades of imported shelled walnuts, which are medium in size and light in color. The import duty of 15 cents a pound has become further effective because of the reduced value of the dollar in foreign exchange and lower purchasing power in the United States. However, imports of shelled walnuts will continue to afford keen competition to the domestic product.

California walnuts have experienced an increasingly heavy competition from pecans, especially of the improved varieties which are marketed principally in the shell. The 1934 crop of pecans, however, is considerably smaller than in any of the past three years and only about 70 per cent of the five-year average, 1927 to 1931. The greatest decrease in 1934 was in the production from seedlings and wild varieties, which is estimated at 60 per cent of the 1933 and 1932 crops and less than 50 per cent of the 1931 production. The production of pecans from improved varieties in 1934 is slightly less than 11,700,000 pounds, or 84 per cent of the five-year average, 1927 to 1931. While the competition from pecans will be lessened somewhat for the present season because of the reduced crop, the outlook in the future is for greatly increased production owing to the large percentage of young pecan trees of improved varieties.

The 1933 and 1934 walnut crops were handled under the terms of a marketing agreement developed by the industry according to the provisions of the Agricultural Adjustment Act. The marketing agreement was designed to regulate the supply of domestic-grown unshelled walnuts to the effective demands of the markets of this country. Surplus walnuts were exported to foreign countries or shelled so that prices in domestic markets would not be unduly depressed. From the 1933 crop and the carryover from 1932, 30 per cent or 240,000 bags were declared surplus and therefore were delivered to the Control Board for disposal. The major portion of this surplus or 140,000 bags was exported to Europe, 47,000 bags were shelled, and the balance of 53,000 bags was on hand at the beginning of the 1934 season. The estimated surplus of the 1934 crop, likewise, was fixed at 30 per cent, leaving 500,000 bags of merchable walnuts available for sale into domestic channels of consumption.

OLIVES

The trend of olive production during the next four or five years will be gradually downward, but the average production probably will be considerably above the exceptionally small crops of 1933 and 1934. The northern California acreages which suffered severe frost damage in 1932 are being rehabilitated as are other orchards which have had inadequate care in the past few years. Thus, potentially, a heavier production may be expected in the next few years than was had in the last two years, but the trend will be downward owing to the very small percentage of the total olive acreage which is now nonbearing. Prices to growers have been increased and canners' selling prices have been stabilized since December, 1933, by means of a Marketing Agreement under the Agricultural Adjustment Act. While prices probably are not high enough to encourage new plantings, they may be sufficient to justify and induce better care of the existing orchards with consequent increases in both production and quality of fruit.

The total acreage of olives in California has decreased 24 per cent since the high point reached in 1928. The 1934 total, as shown by a survey made by the California Olive Canners Control Committee, is 21,437 acres. In addition to this total, 1,720 acres are listed as abandoned in 1934. According to the age of trees, more than 99 per cent of the acreage in 1934 can be classed as full bearing. Because of the severe freeze in the winter of 1932-33 and a lack of adequate cultural care in many orchards, however, in 1934 25 per cent of the total or 5,452 acres are in a partial bearing or in a nonproductive condition. Approximately 60 per cent of this acreage is located in the Sacramento Valley in Butte, Yuba, Sacramento, and Tehama counties. Tulare County, with 15 per cent or 838 acres, has the next largest nonproductive acreage. The bulk of the 5,452 acres listed as partial bearing or as nonproductive in 1934 can be restored to full bearing by proper care. Some acreage undoubtedly will be lost permanently, however, because of the aftereffects of freezing, coupled with the inability to care for the trees properly during the necessary period of rehabilitation.

Surveys made by the California Olive Canners Control Committee in 1933 and 1934 show that the Mission and Manzanillo varieties comprise 80 per cent of the state acreage and the large varieties or so-called "Queen" olives 20 per cent. Approximately twice as much acreage is planted to Missions as to Manzanillos; while in the large varieties, Sevillanos account for 16 per cent of the total state acreage, Ascolanos 3 per cent, and Barounis 1 per cent.

During the past decade the trend in olive production has been upward in California, rising from an average of 11,733 tons in 1921–1923 to an average of 20,500 tons in 1928–1930. In the past few years, however, there has been no further increase in the trend. The 1932 crop, which amounted to 22,000 tons, was the largest on record, but the 1931, 1933, and 1934 crops were small, amounting to only 16,000 tons, 12,600 tons, and 13,000 tons, respectively. This decrease in production was due to unfavorable weather conditions and to considerable neglect of orchards, particularly in the past three or four years.

From the existing information it is probable that a gradual downward trend in production will exist during the next four or five years. This will result from the removal of old, low-yielding trees whose production has declined because of old age and from the probable abandonment of some poorer orchards. Part of this decline, however, will be offset by the increase in yields from the younger orchards. The average production, however, for the next five years will probably be much larger than in the past two years. The 1933 and 1934 crops, being unusually small, were but 38 per cent and 43 per cent, respectively, of normal as compared to an average of 60 per cent of normal during the twelve years, 1921 to 1932 inclusive. Because of the two light crops in 1933 and 1934 and because better prices in the last two years have encouraged greater care of orchards and the possible rehabilitation of formerly abandoned orchards, the crop in 1935 should be heavy unless unfavorable weather conditions, particularly at harvesting time, reduce it.

Virtually all of the prospective decrease in production is likely to be in Missions and Manzanillos. Practically no acreage of these varieties is nonbearing from the standpoint of age of trees, although some of the trees are past the age of maximum yields and are declining in productivity. The production of Sevillanos and Ascolanos, however, is expected to remain at the present level for some years since a considerable portion of the trees has not yet reached full bearing.

While the 1933 and 1934 crops were practically the same in total tonnage, the estimated 1934 crop had 18 per cent more canning fruit than the 1933 crop. In other words, of the 13,000 tons estimated as total production in 1934, 10,252 tons were estimated to be of canning sizes. In 1933, out of 12,600 tons 8,657 tons were of canning sizes. This is an increase in 1934 of 1,570 tons available for canning.

During the four years 1926–27 to 1929–30, an average of 58 per cent of the commercial production of olives in California was canned, 36 per cent pressed for oil, and 6 per cent shipped fresh and dried. In recent years, a larger percentage of the crop has been shipped fresh and dried or, because of low prices, has not been harvested. Therefore, during the

seven years, 1926-27 to 1932-33, approximately 50 per cent was canned, 35 per cent pressed for oil, and 15 per cent either shipped fresh, dried, or not harvested.

The production of edible olive oil in California is but a minor part of the total consumed in the United States. Imports of olive oil, principally from Italy, Spain, and France, comprise approximately 98 per cent of the total amount consumed in this country. Of the canning varieties, Missions and Manzanillos only are used for oil because the oil content of the Queen olives is low. Prices of edible olive oil, although much above prices of other oils such as cottonseed, coconut, and corn, have at no time in the past decade been sufficiently high to return to California producers of oil olives a satisfactory price. During the nine years 1921-22 to 1929-30, the average price paid growers for oil olives was \$34.00 a ton. In 1932-33 they received \$17.50 a ton and in 1933-34, \$35.00 a ton.

The decline in buying power of consumers since 1929 has affected the demand for ripe olives more than the demand for many of our fruits. Olives, being a luxury product, quickly reflect changes in the ability of consumers to purchase them. As compared with the three years 1926-27 to 1928-29, shipments of canned ripe olives in 1933-34 were 32 per cent smaller while the average wholesale price of Large Missions was 14 per cent lower and of Colossal Sevillanos 38 per cent lower.

Shipments in 1933-34 amounted to 433,000 cases as compared to 523,000 cases in 1932-33 and 517,000 cases in 1931-32. Minimum selling prices of canned ripe olives in 1933-34 were fixed by the terms of a marketing agreement under the Agricultural Adjustment Act which became effective on December 13, 1933. The minimum price received under the agreement for Large Missions in cylinder pints was \$1.575 a dozen as compared with an average of \$0.97 a dozen in 1932-33, and \$1.29 a dozen in 1931-32. The minimum price for the 1934-35 season has been fixed under the agreement at \$1.475 a dozen. The minimum price received for Colossal Sevillanos in cylinder pints under the agreement for 1933-34 was \$2.325 a dozen as compared with an average of \$2.40 a dozen in 1932-33 and \$2.76 a dozen in 1931-32.

The carryover of canned ripe olives into the 1933-34 season was the smallest in many years, being but 52,000 cases. The carryover into the 1934-35 season is 116,000 cases as compared with the record carryover of 313,000 cases into the 1930-31 season and an average for the five years 1927-28 to 1931-32 of 251,000 cases. However, the relatively small carryover for 1934-35 gives only a partial picture for it is composed mainly of the larger sizes of olives, while the small sizes have been sold almost entirely. In other words, there has been some difficulty in

moving the larger, more expensive sizes of canned olives, while the small sizes found little difficulty in being sold to the trade.

During the period January 1, 1934, to August 1, 1934, a record was kept by the California Olive Cannery Control Committee of sales of canned ripe olives by territories in the United States. During these months California received 44 per cent of the total sales, the other western states 13 per cent, midwestern states 17 per cent, eastern seaboard states 23 per cent, southern states 1 per cent, Texas 1 per cent, and exports 1 per cent. This indicates a wider demand for canned ripe olives in various states of the country than previously had been estimated. In California, western, and middle western states, a fairly satisfactory distribution of canned olives of all sizes occurred in the months of this survey. In the eastern seaboard states, however, 78 per cent of the total sales of canned ripe olives were of the smallest or Standard size. In California 25 per cent of total sales were Standards, 33 per cent in other western states, and 21 per cent in the middle western states.

Both in the 1933-34 and 1934-35 seasons the relatively small crops have made it unnecessary to invoke the use of the surplus control provisions of the marketing agreement. It was felt that all canning olives could be canned and marketed at the prices fixed in the agreement and that none of them need be considered as constituting a surplus. The prices named in the 1933-34 agreement returned to the growers an average of approximately \$70.00 a ton orchard run for Missions and Manzanillos delivered to canners, and an average of about \$140.00 a ton for Sevillanos delivered to canners. This is based on a normal distribution of fruit by sizes. However, in 1934-35 the larger sizes of fruit available for canning may make the average return to growers on an orchard-run basis somewhat higher than in the previous year.

BEEF CATTLE

Cattle prices are likely to average materially higher in 1935 than in 1934. Cattle numbers in the United States on January 1, 1934, were the highest since 1923, and about 10,650,000 head higher than in 1928, the low point in the current cycle in cattle numbers. The number of cows and heifers two years old and over on January 1, 1934, was estimated at 36,346,000 and was probably the largest for all years. This was an increase of about 5,500,000 over the number estimated as of January 1, 1928, and 2,300,000 over that of January 1, 1923. From 1930 to early 1933 cattle prices declined to very low levels, and producers tended to withhold breeding stock from the market. As a result the number of cows and heifers on hand at the beginning of 1934 was the largest on record.

The drought and the government's cattle-buying program has definitely upset the current production cycle. From June 6 to October 26, inclusive, the government purchased 6,950,314 cattle and calves in 24 drought states. In all probability the total purchases will be in the neighborhood of 7,500,000 head. On January 1, 1935, cattle numbers will probably be 10,000,000 fewer than they were on January 1, 1934. If this proves to be the case, cattle numbers will be approximately what they were on January 1, 1928, when the low point in the production cycle was reached. In view of the diminished inventories of cattle on farms it is probable that numbers will not increase during 1935. It is anticipated that cattle numbers on January 1, 1936, will be even smaller than they will be at the beginning of 1935. If the upswing in the cattle cycle is to be resumed, it will probably not occur prior to 1936.

Inspected slaughter of cattle (omitting slaughter for government account) during the first 9 months of 1934 was about 19 per cent greater than in the corresponding period of 1933. The 1934-period figures were the largest since 1918 and the second highest on record. The inspected slaughter of calves during the similar 1934 period was nearly 26 per cent larger than in 1933 and was the largest total for these months on record. The increase in slaughter was relatively greater in the case of cows and heifers than in the case of steers. Of the government purchases of 6,950,314 head mentioned previously, over 1,000,000 head were condemned, while the bulk of the remainder was slaughtered for the account of federal and state relief agencies.

Imports of live cattle and imports of canned and other beef during the first 8 months of 1934 were the equivalent of less than 2 per cent of the cattle slaughter under federal inspection during this period. Supplies of canned beef entering the United States in 1934 were not materially different from those received in the corresponding period of 1933. If any considerable rise in the price of beef occurs, it is conceivable that these imports might increase materially.

Cattle prices tended downward from early 1930 through 1933. Prices received by producers throughout the United States in 1933 averaged lower than in any year since 1910 when records were first obtained. Because of the relatively large marketings, prices during 1934 have averaged slightly higher during the first 10 months as compared with a similar period for the previous year. The average price of medium steers (900-1,100 pounds) at Los Angeles from January through October was \$5.34 per 100 pounds as compared with \$4.89 for the corresponding months in 1933 and \$5.73 for that period in 1932. The average price received by California producers for veal calves during the first

10 months of 1934 was \$5.48 per 100 pounds as compared with \$5.03 in 1933 and \$5.77 in 1932.

In view of the probable sharp curtailment in slaughter supplies of cattle, hogs, and sheep during 1935, the general level of cattle prices is expected to be considerably higher than in 1934. The prices of the better cattle will probably advance relatively more than those of the poorer grades on account of the scarcity of the former. Indications point to a strong demand for breeding stock of all kinds which will limit the number of cows and heifers available for slaughter.

If cattle prices are high in relation to feed prices during the next few years, as seems probable, increases in numbers can be expected. It is hardly probable, however, that numbers will increase during 1935 in view of above-average death losses and the small calf crop to be expected.

DAIRY

Milk-cow numbers in the United States have passed the peak and are rapidly declining. Fewer heifers are being raised, and drought damage suffered by pastures, meadows, and new seedings will tend to restrict expansion of dairying in 1935. The feed situation together with the low prices of milk cows will probably result in a further decline in numbers. Numbers of milk cows and heifers on January 1, 1934, were over 4,000,000 larger than on the similar date in 1929. A still further diminution would probably have to occur to bring numbers to the point where they were in 1929. On October 1, 1934, the number of milk cows on farms was 2 to 3 per cent less than the number a year earlier, and by the late winter of 1934-35 the number will probably be at least 4 per cent below the number last year.

After the unprecedented drought of the past summer, sharp curtailments in production were naturally to be expected, and these occurred in certain sections of the country. But production held up remarkably well in other sections less affected by the drought, and in some cases during the late summer and early fall of 1934 exceeded that of last season. In the drought areas the most pronounced effect of the feed shortage will be felt during the coming winter-feeding period of about 6 months. The extreme shortage of feed grain and other concentrates and the only slightly less severe shortage of good roughage will raise the cost of production of milk, will considerably reduce the volume of dairy production, and will tend to raise the prices of dairy products. The prospective rise in prices of dairy products is likely to be less than would be experienced if consumer purchasing power were to be up to normal. The possibility of importing butter at prices very little above those of

December, 1934, is expected to prevent any great increase in butter prices and will tend to limit increases in the prices of other dairy products. A favorable growing season in California during the winter of 1934-35 will probably keep California butter prices from rising relatively as much as those elsewhere.

Converted to a milk-equivalent basis, United States production of the most important manufactured dairy products in the first 9 months of 1934 is estimated to have been about 5 per cent less than in the same months of 1933, or only 1 per cent less than the total for 1932. The production of creamery butter was approximately 6.5 per cent less and evaporated milk 4 per cent less, but cheese production was 2 per cent greater, while that of condensed milk was 9 per cent greater. While production was less earlier in 1934, the production of manufactured dairy products in September, 1934, showed an increase of 3 per cent over the corresponding month of 1933.

The outlook for production in the United States in 1935 is obscured by two groups of factors working in opposite directions. Higher prices for beef animals, the low price of dairy products in relation to feeds, and the poor condition of pasture will favor lowered production. On the other hand, relatively large numbers of milk cows are still on farms, ample supplies of labor are available, and the prospects for more normal feed conditions and continued improved demand will favor relatively high production. The present tuberculosis-eradication movement in California is bound to reduce numbers of dairy cattle in California.

United States milk production per cow on October 1, 1934, was about 1 per cent greater than the low production reported one year earlier and about the same as two years earlier. The percentage of cows being milked on October 1 was the highest on record for that date in the ten years for which such records are available. This latter fact indicates a considerable increase in culling due in part to the cattle-purchase program of the government.

The new storing season opened with national stocks of butter less than average, but with holdings of American cheese over 10,000,000 pounds above average—a record for May 1. On November 1, 1934, butter stocks totaled 111,033,000 pounds—approximately 50,000,000 pounds less than on the same date a year previous and 5,000,000 pounds less than the 1929-1933 average. Holdings of American cheese have been exceptionally large since the opening of the storage season. On November 1, 1934, they were 102,873,000 pounds—an increase over the 1933 holdings on a similar date of 7,000,000 pounds and 23,000,000 pounds over the 1929-1933 average.

During the first 9 months of 1934 the apparent consumption of

creamery butter was 3.8 per cent more than during the corresponding period of 1933 or about equal to that of 1932. The apparent consumption of cheese increased 3.7 per cent, that of condensed milk 6.9 per cent, and that of evaporated milk 6.2 per cent. The net increase of all the above products combined on a milk-equivalent basis was 4 per cent, while production decreased 5 per cent during this period.

In terms of other farm products milk-cow prices in the United States were high from 1913 to 1915 and very low from 1917 to 1925, but rose rapidly from the latter year until 1929. It was the high prices of cows in relation to those of other farm products that stimulated the raising of heifers and the expansion of cattle numbers since 1928. Since 1932 milk-cow prices have declined in relation to those of other farm products and in September, 1934, were the lowest in relation to the general level of farm prices for the twenty-five years for which the data are available. These low prices of milk cows will discourage the raising of heifers.

United States farm prices of dairy products reached a low in March, 1933, of 59 per cent of the 1910-1914 average. After that date they showed a steady upward trend until September, 1934, when they were 2 per cent higher than the pre-war average. California farm prices did not show relatively as much improvement as those in other sections of the country until August, 1934. In the latter month prices in California tended upward more sharply than prices elsewhere. Until late 1934 prices of both feed grains and by-product feeds were low as compared with the prices of milk fat, although the latter prices have increased less rapidly than those of the former since the last few months of 1933.

In comparison with domestic prices of butter, foreign prices continue abnormally low. The diverging tendencies toward heavier world supplies and curtailment of domestic production indicate a still further widening of price margins as between London and New York and indicate some importation of butter into this country before the next pasture season. European market prices of butter have been depressed to the low levels now prevailing, in part only, by increase in total world supply. To a far greater extent this is the effect of widespread national trade restrictions which have concentrated world supplies upon the relatively free British market. The increase in British supply has been contributed to chiefly by New Zealand and Australia, where a record production year has recently ended and a new season opened with production in the early months outrunning that of the corresponding period of last year. Both of those countries with free entry into British butter markets have practically doubled their exports of butter within the last five years.

HOGS

United States hog prices in 1934-35 are expected to average materially above the relatively low levels of prices that prevailed during the last three years. Commercial slaughter supplies of hogs in the 1934-35 hog-marketing year will be the smallest in more than twenty years. Consumer demand for hog products has improved considerably during the past year, and a maintenance of the present level of demand appears probable for 1934-35. A material increase in hog slaughter is improbable before the 1936-37 marketing year.

Further curtailment in hog production is under way. Prior to the drought, the unfavorable corn-hog ratio during the last half of 1933 and the first half of 1934 and the operation of the hog-production-control plan were the two main factors tending to reduce hog numbers.

The 1934 spring pig crop for the United States was estimated to be 28 per cent smaller than that of 1933 and a reduction of about 27 per cent below the five-year (1929-1933) average spring crop. It is from this pig crop that the market supply of hogs will be obtained in the 1934-35 marketing year. Hog slaughter in the seven months ending in April, 1935, may be as small as 20,000,000 head as compared with over 27,000,000 head a year earlier. In the twelve months ending September 30, 1935, it may not exceed 30,000,000 head. In 1933-34 the total, not including pigs and sows slaughtered for government account, was 43,910,000 as compared with 47,103,000 head in 1932-33 and 46,655,000 in 1931-32.

Upon the basis of breeding intentions reported about June 1, the number of sows to farrow in the fall season of 1934 would be 38 per cent smaller than in the fall of 1933. When these breeding intentions were reported there were good prospects for an average corn crop. As a result of the drought and the high level of corn prices as compared with hog prices, which continued all through the summer, the fall pig crop may have been reduced more than 38 per cent; a reduction of 50 per cent is not improbable. If the fall crop of 1934 should be 60 per cent of that of 1933, it would total less than 18,000,000 head for the entire country; and the combined spring and fall crops in 1934 would be about 55,500,000 head for the United States. The United States pig crop in 1933 totaled 81,700,000 head and in 1932 it was 81,000,000 head.

The average live weight of hogs slaughtered under federal inspection in the year just ended amounted to about 225 pounds as compared with 232 pounds in the previous year, and the five-year average (1928-1932) of 231 pounds. The very high prices of corn and barley in relation to the prices of hogs undoubtedly will result in a further reduction in the

weights of hogs slaughtered in the present marketing year (1934-35). As a result of this probably much lighter average weight at which hogs will be marketed, the decrease in the total production of federally inspected pork and lard will probably be relatively greater than the decrease in the number of hogs slaughtered. Lard production will probably be decreased relatively more than the production of pork because of the light weights and low quality of the animals.

Although United States hog production in 1934 was sharply curtailed, production in 1935 may be further reduced. It now appears probable that the spring pig crop in 1935 will be smaller than that of 1934, and it is hardly probable that the 1935 fall pig crop will be sufficiently large to offset the decrease in the spring pig crop. But with relatively high hog prices during all of 1935 in prospect and probably declining feed-grain prices during the last half of the year, the hog-corn price ratio may again become highly favorable for hog production during the last half of 1935 if crop-production prospects are good. This will tend greatly to expand breeding for farrowing in the spring of 1936, especially in the present drought areas.

The new storage season will begin with stocks of hog products relatively small, whereas a year earlier they were large; holdings of lard on November 1, 1933, were the largest for that date on record. On October 1, 1934, total storage holdings of pork were 17 per cent less than a year earlier and 1 per cent less than the 1929-1933 (October 1) average holdings. Lard holdings were 33 per cent less than a year earlier, but they were 17 per cent greater than the 1929-1933 average for that date. As compared with October 1, 1933, the storage stocks on October 1, 1934, were less by an amount equivalent to the products of about 1,065,000 hogs.

The prospects are for continued small exports of American hog products to certain foreign markets, while improvements may be anticipated in others. While the official steps taken to increase domestic lard production in Germany have been less successful than anticipated, restricted exchange facilities and high import duties render improbable any material increase in foreign lard supplies. It is likely that Germany may place greater emphasis upon the utilization of vegetable fats and oils rather than of lard. Markets in Great Britain will still be largely restricted by the import quotas on cured pork. However, lard imports into Great Britain for the eleven months beginning in October, 1933, were greater than either the pre-war or post-war (since 1924-25) average. Trade between the United States and Cuba in pork and lard will probably be stimulated by the adoption of a reciprocal trade agree-

ment between the two countries. In the period from 1925 to 1929, when the Cuban duty on lard was relatively low, United States exports of lard to Cuba averaged about 80,000,000 pounds in addition to some 29,000,000 pounds of bacon, hams, and shoulders. In the last two years these averages have been 15,000,000 and 7,500,000 pounds, respectively.

After reaching the lowest level in more than fifty years in the winter of 1932-33, United States hog prices increased but slightly in 1933 and the first part of 1934. In August, 1934, prices advanced materially. From the high point reached during the latter part of August, hog prices declined until the latter part of October—but with prices higher than those of the previous year. The average cost (excluding tax) of packer and shipper purchases at Chicago for the week ending October 27, 1934, was \$5.43 per 100 pounds as compared with \$4.25 for the same period in 1933 and \$3.33 in 1932.

Hog prices in 1934-35 are expected to average materially higher than the relatively low levels of prices in the last three marketing years, largely because of the prospective substantial reduction in slaughter supplies of hogs and other livestock. The advance in hog prices is likely to be most pronounced in the summer months of 1935. When hog production will increase depends to a considerable extent upon changes in corn production. If the yield of corn in 1935 should be average or larger, supplies of corn would be large in relation to hog numbers, and a substantial increase in the 1935 fall pig crop and in both pig crops of 1936 would probably occur. However, an increase in pigs produced in 1936 would not be reflected in hog-slaughter supplies until the marketing year, 1936-37. Even under most favorable conditions for hog production, several years will probably elapse before hog slaughter reaches the level prevailing during the last five years.

POULTRY AND EGGS

It is too early to anticipate the production of eggs in the United States and in California in 1935 with any assurance, but with the total number of hens and all pullets on October 1, 1934, about 7 per cent less than that of last year, and 11 per cent below the number in 1930, a decrease in the spring production of 1935 from that of 1934 or the average of the past five years appears probable. The number of laying stock which will be on hand in January, 1935, is estimated at 10 per cent below the number last winter and about 15 per cent below the average number at that season in the years 1927 to 1931, inclusive. From available evidence, indications are that in California there are from a fourth to a third fewer chickens than there were five years ago.

Baby-chick production by commercial hatcheries in the United States in the 1934 hatching season was about 11 per cent less than in the corresponding period of 1933 and 3 per cent smaller than in 1932. The output of baby chicks by commercial hatcheries in the western states in 1934 declined by about the same amount from that of 1933. A more favorable egg-price situation has prevailed during the fall of 1934, and this has accounted for an advance in fall hatchings in California, September showing the largest number of chicks produced in any similar period since 1929.

The decrease in chicken numbers and production for California in 1934 is partially reflected in the number of eggs shipped from California. Shipments from California during the first 10 months of 1934 were 104 cars or 15 per cent less than the corresponding period of 1933. Indications are that out-of-state shipments during 1934 may be less than during any year since 1920 when such records were first kept. On the other hand, shipments from the other principal egg-shipping states of the West show an increase of over 4 per cent in out-of-state shipments during the first 10 months of 1934 as compared with the similar period of 1933.

The average farm price of eggs in the United States for the spring months of April, May, and June, of 1934 was 13.3 cents a dozen, as compared with 10.7 cents and 10.4 cents for the same months in 1933 and 1932, respectively. Corresponding prices paid California producers for the same months in the three years were 15.2, 13.6, and 14.2 cents, respectively. The rise in prices from April to October, 1934, was 76 per cent as against a usual 64 per cent increase. The cause of this greater-than-normal seasonal advance in egg prices was largely the greater-than-usual decline in summer and fall egg production.

From now (November, 1934) until January or February, 1935, light egg receipts will probably maintain and possibly widen the margin of egg prices over those of a year earlier. During the spring, summer, and early fall of 1935, provided demand conditions do not lessen, an improvement in prices over 1934 should be in order.

The recent improvement in prices in the country as a whole is causing many farmers to hold back a number of this year's layers which are normally sold during the culling season. Also a larger proportion of this year's pullet crop is being held back. In view of the estimated 10 per cent decrease in young stock raised this year, great expansion in flock numbers in the country as a whole or in California can hardly occur.

Certain forces have set in which may make for a relatively larger

hatch during the spring of 1935 than occurred in 1934. When the number of dozen eggs required to purchase 100 pounds of feed remains low for a period of time, the rate of production per laying bird is likely to rise and an expansion of the poultry enterprise is to be expected. Within recent months this state of affairs has tended to prevail, reversing the situation earlier in the year. Appearances point to a continuance of a lower egg-feed ratio for the winter months. Another factor which may make for a larger hatch during this fall and during the coming spring is the outlook for feed prices. Given a normal year for feed, an even more favorable egg-feed ratio would prevail. Indications point to a favorable ratio.

United States stocks of shell eggs placed in cold storage during the spring and early summer of 1934 were about 1 per cent smaller on August 1 than the 1929-1933 average on that date. From August 1, 1934, to November 1, 1934, the stocks of shell eggs in storage were reduced 4,320,000 cases, as compared with the 1929-1933 average of 3,948,000 cases and the 1933 removal of 4,332,000 cases.

Frozen-egg stocks in storage on August 1, 1934, were equivalent to 3,472,000 cases of shell eggs, an increase of about 13 per cent from the August 1 holdings of 1933, and an increase of 14 per cent above the average August 1 stock for the five years 1929-1933. The reduction in frozen-egg stocks between August 1, 1934, and November 1, 1934, was equivalent to 1,030,000 cases, as compared with 724,000 cases in 1933 and a 1929-1933 average of 623,000 cases, indicating a heavier use of frozen eggs during the three months. November 1, 1934, stocks of combined shell and frozen eggs were equivalent to 7,071,000 cases of shell eggs, as compared with 7,527,000 cases on November 1, 1933, and a five-year (1929-1933) November 1 average of 7,573,000 cases.

Egg receipts at four markets in the United States were 11,154,043 cases for the first 9 months of 1934, as compared with 12,306,696 cases for 1933, or a decrease of over 9 per cent. Receipts for the first 9 months of 1934 except February and March were lower than for similar months in 1933, and indications point to a continued lessened supply during the present winter months.

For a long-time trend the statistical position of the poultry-meat industry is favorable. Not only are potential supplies of chickens light, but those meats with which chicken competes—beef, pork, and lamb—will probably be curtailed in amount next year and perhaps for a few years to come. With the smaller supplies of poultry and with prices of competing meats increasing, poultry prices may advance further during the winter of 1934-35, and remain at higher levels during the first half

of 1935 than in that period of 1934. While it is felt that the middle western poultry crop is even shorter than estimated, storage supplies of poultry are larger than usual, exceeding last year's holdings and the average of the past five years on the same date. This was to be expected on account of the heavy early marketings.

The United States average farm price for chickens on October 15, 1934, was 11.8 cents as compared with 9.3 cents in October, 1933. Prices of chickens usually change but little from March to October, but they advanced 10 per cent during the spring and summer of 1934. In California the advance was approximately 20 per cent for the same period.

Total national stocks of frozen poultry in storage on November 1, 1934, were 73,507,000 pounds as compared with 59,528,000 pounds on the same date in 1933 and a 1929-1933 average of 64,296,000 pounds. In view of the prospective lessened supplies of meats during 1935, the storage holdings of poultry do not appear to be burdensome, although present holdings would tend to act as a damper to any large increase in price and will tend to hold prices to a more moderate level.

SHEEP

In the United States sheep numbers have been declining for three years. During 1934 reductions have been large on account of the drought. If range conditions and feed production in 1934 had been normal, an increase in sheep numbers would have occurred. Because of the unfavorable feed and range conditions for sheep, the Agricultural Adjustment Administration inaugurated its program for buying ewes one year old and over in states most seriously affected by drought. Purchases through October 26, in eighteen states totaled about 3,187,000 head. Of this number about 1,952,000 were condemned and were destroyed. The remainder will be slaughtered and the mutton obtained will be used for relief purposes. Present plans are made for purchases of about 5,000,000 ewes.

In view of the large liquidation of sheep numbers in all of the western sheep states and in some of the "native" sheep states, numbers on January 1, 1935, probably will not exceed 46,000,000 head in the United States as compared with slightly more than 51,000,000 head a year earlier. Under present conditions the downward trend is likely to be continued for at least one year longer.

Sheep in the western states were in the poorest condition on record on October 1, 1934. The holding of ewe lambs will be limited by short feeds, although the sale of old ewes will permit the holding of a few more lambs. Even with fairly favorable weather conditions during the present winter (1934-35), the ewes will be in poor condition, in both

breeding and lambing season, and the 1935 lamb crop percentage will be below average. While death losses will depend largely upon the severity of the winter, even under favorable weather conditions losses will be relatively large. The 1935 lamb crop will probably be the smallest in many years. The reduced marketings of lambs as well as of other meat animals will probably result in substantially higher lamb prices in 1935 than in 1934. In the case of lambs marketed during the spring months, however, only a small advance in prices over those received in the spring of 1934 is in prospect.

The national trend of sheep and lamb prices was downward from early 1929 to the summer of 1932 when producer prices were the lowest on record. In the spring of 1933 producer prices were even lower than they had been during the comparable period of 1932. A noticeable raising of producer prices started in June, 1933. The higher price held fairly steady for the remainder of 1933. From February through July, 1934, producer prices for California lambs were higher than they had been since 1930. Beginning in the latter part of July, 1934, a decline set in which made for lower prices than had been the case during the same months of the previous year. The price of Good to Choice grade slaughter lambs at San Francisco during October, 1934, was about \$5.80 per 100 pounds as compared with \$6.40 during October, 1933, and \$4.90 during the same month of 1932.

Much of the advance in sheep and lamb prices in 1933 was the result of the sharp rise in wool prices, since wholesale and retail prices of dressed lamb and mutton did not advance materially until early 1934. The weakness in sheep and lamb prices in recent months has been associated with lower prices for wool as well as for dressed lamb.

As a result of the expected substantial reduction in the number of sheep, the wool clip of the United States in 1935 will probably be the smallest for several years. The 1934 production of shorn wool was estimated at 355,000,000 pounds as compared with 365,000,000 pounds in 1933. Prospects indicate that world wool production for the 1934-35 season will about equal that of 1933-34 which was somewhat below the record production of 1932-33.

Consumption of combing and clothing wool by domestic mills in the first 9 months of 1934 is estimated to have been about 35 per cent smaller than in 1933 and was probably smaller than in the same months of any year in the fifteen years for which statistics are available. Unless mill consumption during the remaining 5 months of the 1934-35 season (up to April 1, 1935) shows a very large increase over the same period a year earlier, stocks at the beginning of the 1935-36 season will be much larger

than at the beginning of the present season. This increase in stocks may largely offset any decrease in the 1935 domestic wool clip. Activity in the wool-textile industry of the United Kingdom in the first 9 months of 1934 was considerably below that of 1933.

Stocks of wool held by dealers, manufacturers, and topmakers at the end of September, 1934, were considered to be relatively large, although there was probably a decrease in stocks held in wool-producing states. Owing to the relatively small disposals of wool in the Southern Hemisphere countries during the first part of the new season, supplies are larger than at the same time a year ago.

Prices received by farmers for wool in the United States reached a low point in July, 1932. From the latter month until March, 1934, there was a steady increase in wool prices. During March, 1934, the price received by California sheepmen was 25.0 cents a pound as compared with 8.5 cents in the same month a year previous. Considerable decline in price from March to October occurred, although conditions showed some improvement during the latter month. Increased European demand resulted in a somewhat higher world price in October, 1934. At present (November, 1934) there is a wide spread between domestic and foreign wool prices. Because of this situation any general advance in domestic prices will probably await improvement in the wool-manufacturing industry in the United States.

ALFALFA

The relatively high prices of alfalfa now prevailing are chiefly the result of temporary conditions occasioned by the drought. The 1934 crops of feed grains in the United States were the smallest since 1881, while the United States hay crop was the smallest in the sixteen years for which comparable figures are available. Production of alfalfa hay in California in 1934 was 12 per cent smaller than in 1933 and 15 per cent below the 1929-1933 average. Prices of feed concentrates in November were 43 per cent higher than a year ago. With the advent of the 1935 harvesting season both feed grains and hay are likely to be in ample supply, whereas livestock numbers will be reduced. This situation is apt to be less accentuated in California than in the country at large because neither the feed supply nor the livestock population of California was as seriously affected as in the principal drought areas. Consequently, California's late 1935 alfalfa supplies will probably meet severe competition from low-priced grain feeds and concentrates.

California acreage and production of alfalfa in 1934 were the smallest since 1919. There was a gradual increase in both for a number of years

prior to the period 1927-1930; but during those years, the trend was reversed and the averages for the four years 1931-1934 have been 3 per cent less acreage and 7 per cent less production than during the immediately preceding period. For the years 1931-1934 the corresponding averages were 793,000 acres and 2,739,000 tons. Acreage in 1934 was 729,000 or 11 per cent below the 1927-1930 average, while the production in the past year of 2,442,000 tons was 17 per cent less than the 1927-1930 average. The fact that yields per acre have averaged lower in recent years than they were from 1922 to 1930 accounts for the greater decline in production than in acreage. From 1922 to 1930 the average yield of California alfalfa hay was 3.63 tons per acre, whereas the average yield from 1931 to 1934 declined to 3.45 tons per acre.

To a certain extent, supplies of other types of hay affect the price of alfalfa hay. The California production of grain hay in 1934 was estimated to be 959,000 tons, or only 3 per cent less than the 1931-1934 average of 984,000 tons. Both the 1934 production and the 1931-1934 average were considerably larger than the 1927-1930 average production of grain hay, of 836,000 tons. Similarly, the production of "other tame hay" has been increasing recently. In 1934, 238,000 tons of the latter were produced in contrast with the averages of 179,000 tons cut in 1927 to 1930, and the 232,000 tons cut from 1931 to 1934.

Prices of U. S. No. 1 alfalfa hay averaged \$13.52 a ton at Los Angeles and \$13.05 a ton at San Francisco from 1931-32 to 1933-34. These prices were 36 per cent and 30 per cent, respectively, lower than the average prices, 1927-28 to 1930-31, of \$21.11 a ton in Los Angeles and \$18.58 a ton in San Francisco. From the fact that between these two periods San Francisco prices declined relatively less than Los Angeles prices, it is apparent that the latter market has come to be less of a deficit area than formerly was the case. In fact, in 1932-33 the San Francisco price averaged \$0.30 a ton *more* than the Los Angeles price. That was the first year on record in which Los Angeles was on a surplus basis. It was the result of a trend (observable for the past fifteen years) of increasing alfalfa production in the counties south of the Tehachapi Mountains at a rate faster than that of the increase in market requirements for those counties. In 1933-34, the former relation between the two markets was reestablished when the Los Angeles price rose \$1.00 to an average of \$13.05 a ton for the year, and the San Francisco price declined \$0.35 to an average of \$12.00 a ton. In the current crop year to date, Los Angeles has been definitely a deficit market for alfalfa and the average price has been \$15.61 (April-November) a ton. This represents a spread of \$1.89 above the San Francisco price of \$13.72 (April-

November). Prices at both markets, it should be noted, have registered marked improvement over 1933-34 prices, although the increase at Los Angeles has been much larger than at San Francisco.

Shipments of alfalfa hay to eastern points have never been a major factor in the California alfalfa markets for several reasons. In the first place, transportation charges on hay are high in relation to its value. In the second place, the requirements for alfalfa hay in eastern markets are usually well enough filled with the supplies of hay grown there so that prices in those markets do not rise far enough above California prices to make such shipments profitable. In the summer of 1934, however, the acute drought conditions in the Middle West forced prices of all livestock feed sharply upward. This was due in part to the destruction of pasturage, which focused feed demands on grain, hay, etc., and in part to the short crops of the latter induced by the drought. To assist in relieving the distress, emergency railroad freight rates were made effective from June 4 to September 4. The reduction in rates amounted to 50 per cent on hay, $33\frac{1}{3}$ per cent on grains and mixed feeds, and 50 per cent on water for domestic and cattle uses. Under these conditions, about 9,000 tons of alfalfa hay were shipped by rail from California to the drought area between June 4 and September 4. Effective October 1, 1934, and in force until April 30, 1935, unless canceled sooner, was a reinstatement of emergency freight rates on feed to the drought area. The new emergency rates were reductions of $33\frac{1}{3}$ per cent from the published rate on hay and 50 per cent on a list comprising beet tops, straw, stover, ensilage, etc. Shipments of alfalfa hay by water from California to the Atlantic seaboard for January through October, 1934, totaled 3,680 tons as compared with 4,226 tons in the calendar year 1933 and 20,790 tons in 1930, the year of largest shipments on record.

In eleven of the thirteen years from 1921 to 1933, the annual average price of alfalfa meal at San Francisco was higher than the Kansas City price. The two years in which the reverse was true were 1928 and 1933. In 1933, shipments of alfalfa meal from California to the Atlantic seaboard reached the record total of 22,000 tons. In the past three years, the volume of shipments of alfalfa meal from California to that market has come to surpass that of hay. In the ten months ending September, 1934, 10,124 tons of alfalfa meal were shipped by water from California to the Atlantic Coast.

The number of dairy cows in California on January 1, 1934, was 619,000. This was 6,000 less than on the corresponding date in 1933, and continues the downward trend which began in 1930. The average decline in California dairy cow numbers since then has been at the rate of 5,700

cows a year and is to be contrasted with the steady increase from 1920 to 1929 which averaged 12,700 cows a year. The number of dairy cows in the state January 1, 1935, will show a continuation of the decline. In the past year this reduction has largely been due to elimination of diseased cows, culling of cows of low productive capacity owing to unsatisfactory returns on dairy products, and to reduction enforced by the drought. Dairy cattle, however, have steadily increased from 38 per cent of all cattle in the state January 1, 1920, to 50 per cent at the beginning of 1934. California production of alfalfa hay in 1934 amounted to 3.95 tons per dairy cow, which was 0.50 ton or 11 per cent less than in 1933 and 14 per cent less than the average per-capita supply 1930 to 1932. Beef cattle in California on January 1, 1934, were estimated at 922,000. In the preceding ten years they decreased by 328,000 head or about one-fourth of the 1,250,000 in the state on January 1, 1924. Sheep numbers in the state have declined from 3,366,000 on January 1, 1931, to 2,886,000 on January 1, 1934, a decrease of 14 per cent.

When natural forage in California is insufficient, grazing of beef cattle and sheep is supplemented with feed concentrates. Alfalfa hay is fed when there is an acute shortage of roughage. Such supplementary feeding was needed in the autumn of 1934. Range conditions on October 1, 1934, were reported to be 53 per cent of normal in contrast with 60 per cent a year earlier and a ten-year average of 71 per cent. Forage and water shortages were reported over ever widening areas in August and September. This was particularly true in southern California. Both cattle and sheep had to be moved from summer ranges in some areas forty to fifty days earlier than usual on account of shortages in water for stock. Late fall and winter feeds were used to a considerable extent in August and September. On November 1 pasture conditions were still low although October rains helped the feed situation, particularly in the south and on the north coast. Disposition, either privately or by government acquisition, reduced cattle numbers, but demand for supplemental feed for the remaining cattle was very strong.

The 1934 production of corn, barley, oats, and grain sorghums in the United States was estimated, November 1, at 51,178,000 tons or 45 per cent of the five-year (1927 to 1931) average of 113,900,000 tons. The computed supplies of feed grains, including stocks on farms and in the markets for use during the season and for carryover on October 1, were 64,500,000 tons as compared with 98,500,000 tons for the 1933-34 season and 105,700,000 tons for the 1927 to 1931 average.

United States hay production, excluding alfalfa hay, in 1934 according to the November 1 forecast was about 57,700,000 tons as compared

with 74,600,000 tons in 1933 and an annual average of 83,700,000 tons during the five years 1927-1931. Alfalfa hay production for the country as a whole in 1934 was 19,500,000 tons as against 24,900,000 tons in 1933 and 23,600,000 tons for the five-year average, 1927-1931. When the drought was becoming extensive, the Agricultural Adjustment Administration canceled the restrictions on growing all forage crops (except corn and grain sorghums) on more than 20,000,000 acres contracted under corn-hog, wheat, and tobacco contracts. Even if United States farm and commercial stocks of grain next June are reduced far below the lowest point in recent years, feed imports more than doubled, wheat feeding increased, and various other adjustments made, the total quantity of grain, millfeeds, and concentrates available for feeding livestock during the twelve-months' period ending July 1, 1935, can hardly exceed 60,000,000 tons and may be several million tons less. As compared with this, about 87,500,000 tons were fed last year and an average of about 96,000,000 tons was fed annually during the preceding nine years for which comparable figures are available. There will be more than the usual supply of silage, but considerable portions of it are either inaccessible or are located too far from the areas which need it most to be consumed there. The quantity of hay available for feeding during the current feeding season is now estimated at 60,500,000 tons as compared with about 77,700,000 tons fed last season and an average of nearly 84,000,000 tons fed annually during the preceding ten years. To supplement the short supply of hay, the record tonnage of corn fodder and considerable straw and stover and cottonseed hulls can be used. The drought areas have also stacked large quantities of Russian thistles and weeds. These low-grade roughages, although helpful in wintering breeding herds and work stock, will not take the place of hay for milk production. Probably on most farms where different classes of roughages are available, cows being milked will be favored over most other kinds of livestock; but judging from the October reports of dairy reporters of the United States Department of Agriculture, in many states severely affected by the drought, hay will constitute far less than the usual proportion of the total roughage that will be fed to milk cows this winter. The shortage of roughage and the near-record high prices of hay now prevailing in some states will also cause farmers to keep their cows in pastures, stalk fields, and winter grain fields as late in the fall and as early in the spring as possible. Hay supplies on the Pacific Coast, while short in certain localities, are sufficient for ordinary needs if economically fed. As more than three-fourths of the concentrates fed to milk cows in this area are usually purchased, the shortage of supplies will be

keenly felt. In recent months milk prices have been high enough to permit the usual rate of feeding in this area, but during the next six months more difficulty may be encountered in obtaining feed supplies owing to the limited supply for sale, the demand from the range area for the limited supply of cottonseed cake and meal, and the increased consumption in the drought area of the locally produced millfeeds. Although increased imports of grain or feed from South America and the Far East may somewhat relieve the shortage of supplies in coastal states, some reduction from the usual rate of feeding seems probable.

From present indications, supplies of commercial feeds in the United States for the 1934-35 season will be smaller than in other recent years. Production of wheat feeds, which comprise over one-half the total production of commercial feeds, depends primarily upon the quantity of the flour outturn. Domestic milling requirements will be met by domestic supplies, supplemented by some wheat importations. The outturn of high-protein concentrates, however, will be materially smaller than last year or than average. Supplies of cottonseed cake and meal for consumption from October, 1934, to July, 1935, and for carryover at the end of the season amount to 1,447,000 tons, as compared with the shipments of 1,682,000 tons in the same period last year. If the usual proportion of seed is crushed this season, about 50,000 tons will be produced in Arizona and California. Poor prospects for flax this season suggest continued light supplies of linseed meal, although some meal made from foreign seed may remain in the United States instead of being shipped to Europe. Supplies of soybean meal will be fairly plentiful owing to the good crop of soybeans. Alfalfa-meal production will be restricted by the reduced alfalfa-hay crop although production from June to September, 1934, was about as large as in the same period last year. Hominy feed production will probably be equal to that of last season. Production of gluten feed and meal may be less than that turned out during 1933-34. Large quantities of brewers' and distillers' dried grains will be available during 1934-35. Domestic supplies of beet pulp will likely be considerably smaller than in 1933-34 since a much smaller tonnage of sugar beets was produced in 1934.

Although numbers of livestock were drastically reduced in the middle western states, this short supply of feed sent prices of feeds sharply upward. The weighted price of feed concentrates is a very significant indicator of the competitive relation between other livestock feeds and alfalfa hay. This weighted feed-concentrates price represents the following feeds: ground barley, bran, cracked corn, rolled oats, cottonseed meal, linseed meal, and beet pulp. After falling from an annual average

of \$40.00 a ton in 1929 to \$20.00 a ton in 1932, the price of feed concentrates at San Francisco rose \$3.00 a ton to \$23.00 for the crop year 1933-34. Since April, 1934, when it stood at \$23.18, this price advanced to \$32.33 a ton in September.

There seems to be no reason to expect the repetition in 1935-36 of short feed crops, poor forage and pasturage to the extent prevailing in 1934-35. The drought has apparently killed the grass, clover, and alfalfa seedlings of last spring over wide areas in the Middle West so that the quantity of feed to be obtained from the usual hay crops and from rotation pasture is likely to be considerably below normal. On the other hand, farmers will probably pay special attention to temporary hay crops and emergency pastures and to the planting of grains that will yield early-available supplies of feeds so that, with a normal rainfall, the effect of the current year's drought will not extend in an extreme degree beyond the winter-feeding period. On the whole, United States dairy farmers will be relieved from the most distressing effects of the drought with the coming of the pasture season next spring. In California relatively high prices of alfalfa hay have stimulated reseeding and the production per acre is likely to increase accordingly. Hence the supply of hay and grain feeds may be anticipated to be ample by the autumn of 1935. The demand will be potentially decreased because of the reduction in numbers of dairy cattle, beef cattle, and sheep both in California and, to a greater extent, in the United States as a whole. This means that in the aggregate, less alfalfa may be fed in 1935 than usually is the case if range and pasture are normal at that time. To offset this influence on the demand for alfalfa, there is the fact that when milk fat and meat prices increase, coupled with short supplies of other feeds, feeding of alfalfa is encouraged. By the summer of 1935, numbers of livestock in the United States will have fully felt the liquidating force of the 1934 drought. At the same time with average yields, the 1935-36 supplies of hay, millfeeds, grain, and concentrates will likely be in excess of feeding requirements. Low prices of concentrates and millfeed exercise a depressing influence on the price of alfalfa in California.

ASPARAGUS

Production of asparagus in California for the next few years will continue to be considerably in excess of requirements for canning and for fresh shipments unless plantings are curtailed and old beds of declining productivity are plowed out. Normally the peak of production should have been reached in 1934 and, while continuing heavy for several years, would have tended downward with the removal of old beds.

The exceptionally heavy intended plantings for 1935, however, indicate that the future removals may be more than offset by future plantings. Such a result will aggravate the surplus situation.

From the latest available information furnished by the United States Department of Agriculture, the total United States acreage of asparagus was approximately 112,740 in 1934. This total was smaller than that of 116,700 acres for 1933 but larger than the five-year average, 1930-1934, of 107,930. During the ten years, 1924 to 1933, the total acreage showed a steady growth from 50,280 acres in 1924 to 116,700 in 1933. The 1934 total was lower, there being 112,740 acres in asparagus that year. Between 1924 and 1934, however, total acreage of asparagus in the United States increased 124 per cent. California has maintained approximately the same percentage of the total United States acreage—63.6 per cent of the five-year average 1930-1934 and 62.4 per cent of the eleven-year average 1924-1934. In the past two years the California percentage of total acreage has been higher than the averages, with 65.6 per cent of the total in 1933 and 64.9 per cent in 1932.

The bulk of California acreage of asparagus is located in the Delta region of Sacramento and San Joaquin counties. During the five-year period, 1930-1934, the Delta region averaged 92 per cent of the total state acreage, Imperial County 4 per cent, the balance of southern California 2 per cent, and Fresno and Tulare counties 2 per cent. The total state acreage for these five years averaged 68,620 acres. According to the 1934 survey made by the Cannery League of California and the California Asparagus Growers Association, there will be 64,337 acres of asparagus in the Delta region to cut in 1935. This total is approximately 4 per cent less than the acreage cut in 1934. Around 5,327 acres of asparagus were plowed out after the 1934 harvesting season as compared to 5,794 acres in 1933. Approximately 2,600 acres planted in 1933 will come into bearing for the first time in 1935. Estimated total production in 1935 is approximately the same as that for 1934.

Plantings of asparagus in 1932 and 1933 were small, averaging only 2,397 acres as against an average of 9,400 acres in 1930 and 1931. Plantings in 1934 were larger than those of the preceding two years and amounted to 3,603 acres. For 1935 growers have indicated that they intend to plant 12,861 acres. If this entire acreage is planted, it will comprise one of the largest plantings in any year on record. The 1934 plantings of 3,603 acres will come into bearing in 1936, and the potentially heavy 1935 plantings will come into bearing in 1937. While approximately 16,000 acres now in asparagus will be more than twelve years old in 1936, the removal of these old beds appeared to have been

decreased somewhat in 1934. In the face of heavy prospective plantings, old beds of low productivity are likely to be operated at a loss.

Carlot shipments of fresh asparagus from California were larger in 1934 than in 1933 but smaller than the exceptionally large movement eastward in 1932. In 1934, 2,626 cars of fresh asparagus were shipped from the state as compared to 2,142 cars in 1933 and 3,431 cars in 1932. The 1934 shipping season in California was about two weeks early and heavy shipments were made almost from the beginning of the season. Approximately 207 cars or 8 per cent of the total number of cars shipped during the season moved in the second and third weeks after 1 car was shipped in the opening week of the season. Shipments from South Carolina and Georgia came into the market in large numbers about one week later than usual. This combination of an early season in California and a slightly delayed season in competing states enabled 79 per cent of the total California shipments in 1934 to move to market before shipments from other states began. This is the highest percentage on record during the years 1926 to 1934. In 1933 only 6 per cent of California shipments moved before the shipments from other states; in 1932, 37 per cent; and during the five-year period 1926 to 1930, 27 per cent.

Total United States supplies of fresh asparagus during the first ten weeks of the California shipping season amounted to 3,177 cars in 1934 as against 2,844 cars in 1933 and 3,784 cars in 1932. Of these amounts California contributed 82 per cent in 1934, 71 per cent in 1933, and 84 per cent in 1932.

Prices received for California fresh asparagus were higher in 1934 than in either of the two preceding years. In addition, shipments in 1934 were 24 per cent greater than in 1933 but 23 per cent less than the unusually heavy movement in 1932. The average price of California asparagus at New York in 1934 was \$2.93 a crate as compared to \$2.71 in 1933 and \$2.73 in 1932. The average price received during the five years 1926-1930 was \$4.45 a crate.

The 1934 crop of fresh asparagus in California was handled according to the terms of a marketing agreement and license under the Agricultural Adjustment Act. The agreement provided for a proration and control of shipments to points outside the state if and when available supplies were greater than the entire market could consume. This plan worked to the advantage of asparagus growers during the 1934 season since 484 cars more were shipped than in 1933 and the average price received per crate in New York City was \$0.22 higher in 1934 than in the preceding season. It seems probable, in retrospect, that shipments could have been continued profitably after the first week of May. Ordi-

narily a considerable volume of asparagus moves eastward until about the end of June.

The 1934 pack of canned asparagus was processed under the provisions of a license issued by the Secretary of Agriculture under the Agricultural Adjustment Act to control the volume canned and thereby to stabilize prices both to growers and to the trade. Under the terms of this license the total California pack was fixed at 1,900,000 cases, and all canners were allowed to operate without restriction upon volume until the total had been reached. Thereafter, the canning season was declared officially closed.

The total California pack of canned asparagus in 1934 amounted to 1,914,000 cases which, with the carryover on March 1, 1934, of 276,000 cases, made a total supply of 2,190,000 cases available for shipment in the 1934-35 season. During the four years 1926-27 to 1929-30, when demand conditions were very favorable, the consumption increased from 2,081,000 cases to 2,619,000 cases with an average for the four years of 2,341,000 cases. The pack in 1930-31 was exceptionally large, being 2,663,000 cases as compared to the record pack of 2,673,000 cases in 1929-30. Consequently, while more than 2,000,000 cases were consumed in 1930-31, a heavy carryover was brought into the following year. This was followed by a light pack and another heavy carryover into the 1932-33 season. In 1933-34 the fairly heavy pack of 2,135,000 cases plus the more-than-average carryover of 454,000 cases were disposed of at prices averaging 34 per cent less than those prevailing in the four-year period 1926-27 to 1929-30. An exceptionally light carryover of 276,000 cases, therefore, was brought into the 1934-35 season.

The 1934-35 total supply of canned asparagus aggregating 2,190,000 cases was almost 20 per cent lower than the average for the preceding five-year period 1929-30 to 1933-34. Canners' selling prices, therefore, are considerably higher than in the preceding year. The 1934-35 export price averaged \$5.37 a case during the first five months of the season as compared to \$4.42 a case during the same period in 1933-34 and \$4.56 a case for the entire twelve months of that season. Prices to growers for canning asparagus averaged $1\frac{1}{4}$ cents to $1\frac{1}{2}$ cents a pound higher in 1934 than in 1933.

BARLEY

Supplies of barley as well as of other feed grains in the United States will be much larger in 1935-36 than in 1934-35, whereas the numbers of livestock will be considerably reduced.

The United States production of barley in 1934 was estimated on

November 1 to be 2,928,000 tons, which is only 51 per cent as large as the average for the four years 1930–1933, and is the smallest crop since 1900. As a result of the severe drought the average yield per acre for the country as a whole was 37 per cent below the average for the preceding ten years. Because of the abnormally large abandonments, the acreage harvested in 1934 amounted to 8,712,000 acres as against an average of 11,885,000 acres from 1930 to 1933. Largely owing to drought conditions, the 1934 barley crop in South Dakota was only 48,000 tons, or 7 per cent of the average production for 1930 to 1933. North Dakota and Nebraska, both important barley states, grew but 26 per cent and 15 per cent, respectively, of their four-year averages, while Iowa's 1934 crop was 43 per cent of its production for the same period. Minnesota, with 619,400 tons of barley in 1934, grew 62 per cent and Wisconsin, with 462,400 tons, grew 91 per cent of their respective averages for the years 1930 to 1933.

The 1934 barley crop in California was 536,800 tons. This is 19 per cent smaller than the 1930–1933 average and with two exceptions (1924 and 1931) is the smallest crop since 1900. Total available supplies of California barley, however, were not as short for the 1934–35 crop year as might be inferred from the quantity harvested, because of the existence of a large carryover from the 1933–34 crop year. This carryover of about 200,000 tons meant that production-plus-carryover amounted to about 737,000 tons, or within 10 per cent of the four-year average production-plus-carryover for 1930 to 1933.

Not only is the supply of barley in the United States exceedingly short this year, but also the production of other feed grains (corn, oats, and grain sorghum) was the smallest since 1881, and the 1934 hay crop was the smallest in the sixteen years for which comparable figures are available. The 1934 combined production of corn, barley, oats, and grain sorghums was estimated on November 1, 1934, at 51,178,000 tons or 45 per cent of the five-year (1927 to 1931) average of 113,900,000 tons. The computed supplies of feed grains, including stocks on farms and in the markets for use during the season and for carryover on October 1, was 64,500,000 tons as compared with 98,500,000 tons for the 1933–34 season and 105,700,000 tons for the 1927–1931 average. Allowing for a minimum carryover of feed grains at the end of the season, for increased imports, for somewhat larger feeding of wheat, and for the apparent supply of other grains, concentrates, and millfeeds, the total quantity available for livestock during the 1934–35 feeding season can hardly exceed 60,000,000 tons and may be several million tons less. As compared with this, about 87,500,000 tons were fed last year and an average of

about 96,000,000 tons were fed annually during the nine preceding years for which comparable figures are available.

The grain requirements for livestock feeding in the United States will be less in 1935-36 than in 1933-34 because of the smaller number of livestock. Livestock in the country as a whole has been reduced more rapidly this year than in any previous year; and by January 1, 1935, their numbers are expected to be only around 80 per cent of the livestock population a year earlier. The reduction was partly due to the government's hog-adjustment program and partly to the drought of 1934, including natural liquidation because of feed shortage and the cattle and sheep buying program designed to relieve the drought situation. The total number of meat animals on farms at the end of the present year will probably be the smallest in more than thirty-five years. Cattle numbers in the United States on January 1, 1935, are expected to be nearly 10,000,000 head smaller than those of a year earlier or close to the low point of the present cattle-production cycle. Because of the short supplies and high prices of feed, particularly corn, hog production is expected to be on a greatly reduced scale until the spring of 1936, and market supplies of hogs are likely to continue unusually small until late in that year. With considerable liquidation of sheep numbers now in progress, the number of breeding ewes in 1935 will be somewhat smaller than that of recent years, resulting in a decreased lamb production next year. Horse numbers on January 1, 1935, will be smaller than a year earlier, but the rate of decrease in 1934 will probably be less than in 1933. Production of poultry this year has been much less than last and the smallest since 1925. Scarcity of feed in many important poultry-producing states will force some further reduction in the number of hens carried through the winter, but for the country as a whole the reduction from January 1 last year will probably not exceed 10 per cent. In California, livestock numbers have not been reduced to anything like the extent for the country as a whole.

A potent factor influencing the feed demand for barley is the relation of feed-barley prices to those of competitive feeds. Whenever barley prices rise in relation to the prices of competitive feeds, there is a tendency to restrict the use of barley for feed, and the converse is also true. The price of feed barley in San Francisco in 1933-34 was 67 per cent of the feed-wheat price. This is somewhat below the average ratio of 72 per cent from 1921-22 to 1933-34. The ratios of feed-barley prices to those of No. 2 yellow corn, sacked milo, and feed concentrates were also slightly lower than the averages of those respective ratios since 1921. Thus far in the current crop year the barley-wheat price ratio has in-

creased to an average of 84 per cent. The price ratio of barley to feed concentrates has risen to 81 per cent in comparison with averages of 73 per cent in 1933-34 and 75 per cent from 1921-22 to 1933-34. The ratio of feed-barley prices to those of sacked milo from June to November has likewise risen above the 1933-34 average. The ratio of feed barley to alfalfa-hay prices has increased from 132 per cent in 1933-34 to 148 per cent during June to November, 1934, as compared with an average of 134 per cent for the preceding thirteen years. The barley-corn price ratio, on the contrary, has materially declined in the current season as compared to the 1921-22 to 1933-34 average. These ratios are at present unfavorable to the use of barley for feed in relation to the specified alternative feeds.

The crop year 1933-34 was the first full year to show the results of the legalization of beer. The domestic outlet for malting barley improved materially in 1933-34. Manufacturers of beer in the United States used 1,433,000,000 pounds of barley malt and other malt in the fiscal year which closed June 30, 1934, as compared with 384,000,000 pounds in 1932-33 and 96,000,000 pounds in 1931-32. Distillers used 2,766,000 bushels of malt in 1933-34, 560,000 bushels in 1932-33, and 506,000 bushels in 1931-32. The local market for malting barley in 1934, moreover, shows signs of expansion beyond the 1933 level. Sales of beer by California breweries for the six months, April to September, 1934, amounted to 39,000,000 gallons as compared with 20,000,000 gallons for the same period of 1933. California malting use absorbed 31,000 tons of barley in 1933-34 in contrast with 9,000 tons in 1931-32 and 14,000 tons in 1932-33. In addition, about 30,000 tons of California malting barley were shipped to Wisconsin and Illinois brewers so that malting use in the United States accounted for about 9 per cent of the consumption of California barley in 1933-34. The price situation which made the eastward movement of California malting barley possible on this scale was an average price of \$1.40 a hundredweight from June, 1933 to May, 1934, for malting barley in Chicago, while the average price of California shipping barley for the same months was \$0.99. From June to September, 1934, this spread of \$0.41 increased to an average of \$0.75 a hundredweight.

The same high prices, however, have curtailed exports of California barley. Barley exports from San Francisco from June to September were 27 per cent less than exports during the corresponding months of 1933. Declining barley prices in middle western and intermountain markets in October tended to prevent shipments of California barley for either malting or feed purposes. The serious drought in June-

August, 1934, and the attendant increases in feed-grain prices in the middle western states opened up a vast and attractive market for California barley. In addition, emergency freight rates amounting to 66.6 per cent of the published tariffs on grains and mixed feeds moving to the drought areas were effective from June 4 to September 4. The Minneapolis feed-barley price averaged \$0.79 a hundredweight above that in San Francisco from June to September, 1934. The extent of the price rise was from averages of \$1.42 in Minneapolis and \$0.69 in San Francisco in April to \$2.23 and \$1.41 respectively, in September. The similar existence of an average spread of over \$0.50 between these two markets in the 1933-34 season, with Minneapolis being the higher, made possible in the last four months of the 1933-34 crop year an almost unprecedented phenomenon: feed barley was shipped to the extent of about 12,000 tons from California to the Atlantic Coast points.

In recent years foreign markets have been an outlet for a declining portion of the California barley supply. In part, this has been due to increasing nationalistic restrictions on international trade which have taken the form of successive raises in tariff barriers, quantitative limitation of imports, and control of foreign exchange transactions. The average exports, 1927-28 to 1929-30, were 33 per cent of the supply used in those years; for 1930-31 to 1933-34 they declined to 27 per cent; and for 1933-34 they were 22 per cent. Exports in 1933-34 were 121,000 tons or 61 per cent of the quantity exported in 1932-33. Likewise, the proportion of California barley exports shipped to the United Kingdom has declined from 91 per cent, 1927-28 to 1929-30, to 86 per cent, 1930-31 to 1932-33. In part, declining absolute importance of that market for California barley is a result of the smaller utilization of barley in the United Kingdom, although effective March 1, 1932, an import duty of 10 per cent ad valorem on barley in the form of grain was established in that country. Average United Kingdom production-plus-imports of barley, 1930-31 to 1933-34, was 87 per cent of the average quantity produced and imported from 1927-28 to 1929-30. Russia has apparently regained her place as the largest supplier of the United Kingdom's barley imports. From 1910 to 1914 Russia shipped an average of 31 per cent of such imports, from 1925 to 1929 the corresponding figure was only 11 per cent, but from 1930 to 1933 that country supplied 32 per cent. While Russian barley was almost absent from British markets, its place was taken by barley from the United States and Canada, which countries supplied an average of almost half (35 and 14 per cent, respectively) of British imports, 1925-1929. In the years 1930 to 1933, however, the United States and Canada fell back

to furnishing slightly over one-quarter (20 and 8 per cent, respectively) of the average imports.

COTTON

The world supply of all cotton for the 1934-35 season will probably be from 5 to 10 per cent smaller than the record supply of 1933-34, but considerably larger than for any year prior to 1931-32. The indicated world supply of American cotton in 1934-35 is about 18 per cent less than in 1933-34 and about equal to the average for the ten-year period ended 1932-33, while the expected supply of foreign-grown cotton in 1934-35 is from 5 to 10 per cent larger than the unusually large supply of 1933-34 and is about 25 per cent larger than the average for the ten-year period ended 1932-33.

World mill consumption of all cotton in 1933-34 was about 3 per cent larger than in 1932-33 and was the largest since 1929-30. Total consumption of American cotton declined about 4 per cent, whereas consumption of foreign-grown cotton increased 13 per cent. Most of the decline in the consumption of American cotton occurred in the United States where there was a decline of 7 per cent from the previous season. Consumption of American cotton in foreign countries declined only 182,000 bales, or 2 per cent.

The world supply of American cotton is now down to about average, the indicated supply for the 1934-35 season being slightly more than 20,300,000 bales as compared with an average for the ten years ended 1932-33 of about 20,400,000 bales. This supply for the current season is approximately 4,260,000 bales less than the 1933-34 supply and about 5,600,000 bales below the extremely large supply in each of the two seasons, 1931-32 and 1932-33. The sharp decline in the world supply of American cotton since 1932-33 reflects both the reduction in production and a larger consumption in the last two seasons than in the three preceding seasons.

The indicated world supply of American cotton for the current season is made up of an estimated carryover of 10,600,000 bales, and a crop which was estimated at nearly 9,731,000 bales on December 1. The estimated production is 3,316,000 bales less than the previous crop, about 4,935,000 bales less than average production in the five-year period 1928-1932, and accounts for the greater part of the decline in the current season's supply. This year's domestic crop, as estimated in December, is the smallest since 1901, with the exception of 1921. The unusually small crop is the result both of the smallest indicated acreage for harvest since 1901 (owing to the voluntary cotton adjustment pro-

gram and the Bankhead Act) and of the extremely low yields in the western part of the Cotton Belt resulting from the drought. Production of California cotton in 1934 totaled 255,000 bales or 29 per cent more than the average crop of 197,000 bales for 1930 to 1933.

The indicated area for the 1934 United States harvest of 27,515,000 acres is 8 per cent less than the acreage harvested in 1933, and 13,039,000 acres or 32 per cent less than the average for the five-year period 1928-1932. Without the cotton adjustment program or the Bankhead Act in 1934, the cotton acreage in this year would probably have equaled or exceeded the 40,852,000 acres planted in 1933, since cotton prices in the latter part of 1933 and early 1934 were materially higher than in earlier months, both actually and in relation to competing crops and to costs, largely owing to the depreciation in the foreign exchange value of the dollar and the 1933 adjustment program. California cotton acreage harvested in 1934, on the contrary, was about 13 per cent larger than the four-year average for 1930-1933.

Although the late October estimate of total foreign cotton production in 1934-35 is only tentative, the new crop will probably be larger than the record 1933-34 crop by something like 600,000 bales of approximately 478 pounds. This would give a total crop in foreign countries of slightly more than 13,600,000 bales. The amount of the expected increase in the total foreign production is due largely to an estimated increase of 200,000 bales in China, 300,000 bales in India, 300,000 bales in north Brazil, and small increases in some minor-producing countries, with decreases in Egypt and Russia and elsewhere. With the carryover of foreign cotton on August 1, 1934, something like 1,000,000 bales larger than at the beginning of last season, the indications are that the 1934-35 supply of foreign cotton will be around 1,600,000 bales larger than the record supply of the previous season and something like 3,900,000 bales or 25 per cent larger than the average for the ten years ended 1932-33.

Cotton prices in the United States continued their upward trend throughout most of the 1933-34 season and in August, 1934, were at the highest levels reached since June, 1930. Domestic market prices of cotton in 1933-34 averaged 51 per cent higher than in the previous season, and, including the processing tax, the cost of raw cotton to domestic manufacturers was about twice as high as in 1932-33. Prices of American cotton in Liverpool during 1933-34 in terms of British currency were higher than a year earlier, while Liverpool prices of most foreign growths were somewhat lower than in 1932-33. Prices of American cotton increased still further as compared with those of foreign cotton during the early part of the present season. To a large extent the

relatively lower prices of foreign cotton as compared with American cotton are due to larger supplies of foreign cotton and smaller supplies of American. However, another factor also contributing to the relatively high prices of American cotton is the strong holding movement resulting, in part, from the Commodity Credit Corporation's 12-cent loan.

DRY BEANS

As a result of the increase in prices of beans this season, because of the comparatively small supply, growers will be inclined to plant an excessive acreage in 1935. An acreage equal to that planted in 1934, assuming average abandonment and average yields, would produce about 12,000,000 bags of beans. This quantity would be close to the average annual disappearance for all purposes and if proportionately distributed among the different classes or varieties of beans would about equal the average domestic requirements during the recent years. Any considerable increase over this quantity would probably go into competition with the 1936 crop.

The indicated production of dry beans on November 1, 1934, was 9,548,000 bags which would be the smallest production since 1927. This short-crop production, plus a carryover on September 1 of about 1,700,000 bags, estimated largely on reports obtained from trade sources, gives a total supply of only 11,248,000 bags available for all uses during the 1934 crop-marketing season. This is about 628,000 bags less than the estimated disappearance during the 1933 season and about 928,000 bags below the average of the previous five years. If the total disappearance of beans during the current marketing season were to continue on the level of the average of recent years, the present supply, unless supplemented by imports, would be entirely exhausted before the 1935 crop is ready for market. This present shortage in the domestic supply is due to acreage abandonment and small yields resulting from drought conditions and not to a reduced acreage planted in 1934.

The drought influence on bean production in 1934 was most marked in the Pinto-producing areas of Colorado and New Mexico where a total crop of but 396,000 bags was the estimate on November 1. Production of even that quantity would be only 22 per cent of the average for 1926-1933 of 1,789,000 bags, but trade reports indicate that final estimates will show a still smaller crop. Colorado, which on the average for the past eight years grew 1,169,000 bags or 65 per cent of the total for the two states, in 1934 produced only 290,000 bags according to the November 1 estimates. New Mexico with an estimated 1934 crop of 106,000 bags grew 17 per cent of its 1926-1933 average of 620,000 bags. Since

these two states accounted for 94 per cent of the total average production of the Pinto variety for 1926-1933, it is apparent that the supply of the new-crop Pinto beans for 1934-35 is exceedingly small. Small quantities of the Pinto are grown in California, Kansas, Arizona, and Nebraska, but the total of 136,000 bags grown in those states in 1933 is unlikely to be exceeded in 1934. Since the Pinto is the largest element in the total production of colored beans, prices advanced rapidly in the summer and autumn of 1934 until the Pinto reached the highest monthly average price per 100-pound bag on record of \$6.40 f.o.b. rail California in November, and the Pink beans rose to \$5.40 on the same basis in November, the highest monthly average price since September, 1930.

Production of beans in Idaho, Montana, Wyoming, and Nebraska in 1934—chiefly of the Great Northern variety, a large white type—was reported on November 1 to be 1,817,000 bags or 88 per cent of the average of 2,070,000 bags, 1926-1933. In the eight years, 1926 to 1933, on the average, Great Northern beans comprised about 70 per cent of the beans grown in these four states, and this accounted for more than 98 per cent of the total United States crop of that variety. Michigan's 1934 bean crop—chiefly of the pea-bean type—was 2,894,000 bags according to the November crop report, which is 10 per cent below the 1926-1933 average of 3,217,000 bags. Earlier season estimates were as low as 2,412,000 bags; and when a very short crop was anticipated, the f.o.b. Alma price of Pea beans per 100-pound bag reached \$3.79 in September. The average for October, however, receded to \$3.36.

Imports and exports continued to be relatively unimportant factors in the domestic bean situation during the year ended September, 1934, when imports exceeded exports by only 46,000 bags. Of the total imports of 158,000 bags, 73,000 bags were from Mexico as compared with negligible imports from that country during the three previous years. Shipments from the United States to Puerto Rico, which had been increasing since 1930, declined from 386,000 bags in 1932-33 to 296,000 bags in 1933-34, a decrease of 23 per cent. Shipments from California alone to Puerto Rico, however, in the crop year 1933-34 amounted to over 225,000 bags and were the largest on record. At one time Cuba was an important market for United States beans, but this dominant position has been steadily lost during the past four years when world bean supplies have been large and foreign bean prices low. By the terms of the Trade Agreement between the United States and Cuba, proclaimed August 24, 1934, reductions of 25 per cent in the Cuban tariff were to apply to imports of red and pink beans from the United States. Similarly, reductions of 50 per cent and 40 per cent were made in the Cuban duties on white and other beans, respectively.

Carryover of beans in California at the beginning of the 1934-35 season was difficult to measure accurately for several reasons. The harvest of several varieties was very early. At the same time movement of beans into trade channels in August and September was abnormally active because of the abruptly advancing prices and the anticipated short national crop. For example, warehouse stocks of the Large lima beans on September 1 were 125,000 bags, yet the California Lima Bean Growers' Association estimated that at that date only 65,000 bags were old-crop beans, the remainder being from the 1934 crop. On the arbitrary assumption, however, that the smallest warehouse stocks in August or September represent the carryover for the different varieties, the carryover in California at the beginning of the 1934-35 season was 648,000 bags or 18 per cent of the 1933 crop, which may be compared with a carryover of 10 per cent a year previously, and an average of 10 per cent for 1926-1933. Even if the actual carryover of old-crop beans in California be assumed to be half of the quantity in warehouses on September 1, the supply for the 1934-35 season would be about 3,680,000 bags as compared with 3,762,000 bags for 1933-34, and 3,176,000 bags for 1932-33. The nominal carryover of 648,000 bags in the autumn of 1934 added to the production of 3,356,000 bags gives a supply of 4,004,000 bags. The largest year's supply was in 1930-31 when 4,353,000 bags were available. The sluggish movement of the large California supply into trade channels in 1933-34 accounts for the relatively heavy carryover at the beginning of the 1934-35 crop year.

Although the 1933 crop of the Large lima was 7 per cent less than the 1926-1933 average, and only 5 per cent of the previous year's crop was on hand at the beginning of the season, about 65,000 bags or 7 per cent of the 1933 crop were still in California warehouses on September 1, 1934. Movement from California warehouses from April to July was much slower, in relation to the quantity on hand, than in 1933, but the average 1933-34 f.o.b. price per 100-pound bag for this variety was \$5.52, the highest since 1930-31, and compares with the 1932-33 average of \$4.77. Despite the fact that Large lima acreage was about 18 per cent larger in 1934 than in 1933, lower yields due to climatic conditions resulted in a 1934 crop of approximately the same size as in 1933. The current year's crop of about 980,000 bags plus the estimated carryover amounts to 1,045,000 bags or within 1 per cent of the average supply for 1930 to 1933. Prices rose abruptly from averages of \$5.55 per 100-pound bag in August to \$6.16 in September, influenced partly by the preliminary reports of a very short Michigan Pea bean crop, but a weakening of Pea bean and Large lima prices in October and November reduced

the average price f.o.b. rail California, of the Large lima to \$5.80 in November.

The 1933 crop of the baby limas was about 25 per cent larger than the average, 1926-1933, and in addition there was a carryover of 68,000 bags or 21 per cent of the small 1932 crop, so that the visible supply of 698,000 bags was about the same as in 1930-31 and was surpassed only by the record-setting supply of 766,000 bags in 1931-32. As might be expected, the price of this type reflected the heavy supply by declining from an average of \$3.98 for 1932-33 to \$3.73 for 1933-34. Relative to the size of the season's supply, trade absorption of baby limas slackened from April to July in comparison with previous years and the new season opened with stocks of 110,000 bags in California warehouses, or 17 per cent of the 1933 crop. Of this quantity, however, only an estimated 68,000 bags were old-crop beans. Baby lima acreage in 1934 was about 10 per cent larger than in 1933, and the crop was about 696,000 bags as compared with 630,000 bags in the previous year. Using the estimated carryover of 68,000 bags of old-crop beans, the apparent supply for the 1934-35 season was 764,000 bags, or 16 per cent larger than the average supply of 658,000 bags for the four years 1930-31 to 1933-34. In July, 1934, the average f.o.b. rail price of this variety was \$3.36, but in sympathy with the short crops and rapidly rising prices of Pea and Great Northern beans, baby lima prices rose to an average of \$4.41 in September. Subsequently they declined to an average of \$3.76 in November.

The annual average f.o.b. price per 100-pound bag of \$2.93 for Black-eye beans (Blackeye cowpeas) in 1933-34 was the lowest of all varieties in California. This was associated with a supply of 644,000 bags, of which 57,000 bags were carried over from the 1932 crop. Only two years prior to 1933 witnessed larger supplies of this variety in California. In 1930-31, production-plus-carryover amounted to 876,000 bags, the largest supply on record. The supply in the following year, 1931-32, of 655,000 bags was but slightly larger than that in 1933-34. Movement from warehouses into trade channels in the past season amounted to 477,000 bags as compared with 421,000 bags in 1932-33, but the remaining stocks on August 1, 1934, constituted a carryover of 167,000 bags or 28 per cent of the 1933 crop. Trade disappearance from March to July was much slower in relation to the size of the crop than in 1933, or on the average from 1926 to 1933. According to trade estimates, the 1934 production of about 435,000 bags was about 20 per cent smaller than the average crop of 543,000 bags in the preceding four years, and the current year's supply is 602,000 bags. This supply is about 60,000 bags smaller than the average for 1930 to 1933, but it is about 127,000 bags larger than the average production-plus-carryover from 1926 to 1929.

Average f.o.b. rail California prices rose gradually from a low point of \$2.53 in May to \$2.69 in July, and then jumped rapidly to \$4.17 in September, after which they declined to \$3.78 in November.

Pink beans had an average f.o.b. rail California price of \$3.19 in 1933-34, after experiencing unprecedentedly low prices in 1931-32 and 1932-33. This was in spite of the fact that the 1933 production (587,000 bags) plus carryover (27,000 bags) constituted a supply (614,000 bags) larger than that of any year since 1926-27. The carryover from the 1933 crop was 83,800 bags or 14 per cent of the 1933 crop. This, with the crop estimated by trade sources at 457,000 bags, comprises a supply of 540,800 bags, or about 6 per cent smaller than the average, 1930 to 1933. Movement from warehouses in 1933-34 lagged somewhat behind the trade disappearance in the 1932-33 season, especially from March to July. Prices of Pink beans f.o.b. rail California advanced from averages of \$2.79 per 100-pound bag in May to \$3.46 in August, and then rose quickly to \$5.40 in November. This was largely due to the prospective extremely short crop of Pinto beans in Colorado and New Mexico, which will continue to be a buoyant influence on Pink bean prices and markets for the remainder of the 1934 crop year. Since the production of the Pinto in those states under dry-farming practices is dependent upon rainfall, there is every reason to believe that with normal precipitation in 1935 and an average acreage planted, the Pinto crop next year will be such as to restore that variety to its usual competitive relations.

Cranberry beans have come to be the sixth most important variety in California in point of volume produced. With a 1933 crop 7 per cent smaller than the average for 1926-1933, and with a carryover at the beginning of that year of only 4,000 bags, the supply of 101,000 bags was not excessive. The 1933-34 average f.o.b. rail price of \$5.09 was the highest since 1930-31 and represents a considerable advance from the low prices of the intervening years. In the summer of 1934 California warehouse stocks of Cranberry beans declined until they were a smaller proportion of the year's supply than was the case of the average for 1926-1933. On September 1, the carryover was 922 bags. The new crop consisted of about 100,000 bags, so that the supply for 1934-35 is about 101,000 bags or 11 per cent less than the 1930-1933 average. In sympathy with increasing bean prices generally, in view of the short United States crop of all varieties in 1934, the average f.o.b. rail California price of Cranberry beans rose from \$5.01 in July to \$5.73 in November.

After twenty-three years of declining production, supplies of Bayo beans in both 1932 and 1933 were less than 10,000 bags. Because the market for the Bayo is firm in its preference for that variety, even though only small quantities are demanded, the average price in 1933-34

was \$6.19, the highest of any variety of beans grown in California. There was a 1,209 bag September carryover, and with a 1934 crop estimated at about 13,000 bags, the current year's supply is about 14,000 bags.

Four varieties of beans grown in California meet direct competition from the same or closely commercially related beans grown in other states. These are the Small White, Pinto, Red Kidney, and California Red.

California Small White beans ended the 1933-34 season with 142,000 bags or 34 per cent of the 1933 production in California warehouses. This is not surprising in view of the fact that the 1933 California Small White crop was 16 per cent larger than the 1926-1933 average. In addition to this there was a carryover of 12 per cent of the 1932 crop, and the production of the Michigan Pea beans was 12 per cent larger than the average, 1926-1933. The average f.o.b. rail price of the Small White beans for the crop year was \$3.45. The 1934 Small White crop in California was about 430,000 bags according to trade estimates. This, with the carryover to the current season, constitutes a visible supply of about 572,000 bags. Supplies of this variety for 1934-35 thus exceed the average production-plus-carryover from 1930 to 1933 of 450,000 bags by about 27 per cent. Competitive pressure from Pea beans is likely to be relieved this year because the total bean crop in Michigan and New York combined is 6 per cent smaller than the average for the years 1926-1933. F.o.b. rail California prices of the Small White beans improved from \$3.14 in May to \$3.83 in September, 1934, after which, in sympathy with lower prices of Michigan Pea beans, they declined to an average of \$3.51 in November.

In the past six years, California production of the Pinto beans has fluctuated between a minimum of 15,000 bags in 1931 and a maximum of 72,000 bags in 1930. Since this state has grown on the average about 2 per cent of the national Pinto production, it is obvious that the size of the crops in Colorado and New Mexico, which ordinarily grow more than 90 per cent of the total, dominates the supply side of the market for this variety. Movement out of California trade channels in the first five months of the 1933-34 season was relatively more rapid than in former years; and although the opposite was true from March to June, there was no Pinto carryover in California on September 1, 1934. The average f.o.b. rail price for the crop year 1933-34 was \$3.82. With a 1934 crop of about 97,000 bags in California, the year's supply in this state is the largest on record. Prices have reflected the extremely short supply situation in the Pinto-producing states by advancing from \$3.32 f.o.b. rail California in April to \$6.40 in November.

Although only a minor portion of the national production of Red

Kidney beans is grown in California, the qualities which make California Red Kidney beans desirable for seed use are responsible for a somewhat preferred market for them in New York and Michigan. The 1933 crop in California of 32,000 bags was only 54 per cent of the average for 1926–1933; and with the carryover to the 1933–34 crop year of 4,000 bags, the production-plus-carryover was but 52 per cent of the average supply of 69,000 bags from 1926 to 1933. Trade disappearance from October to March was relatively larger than in 1932–33, but for the remainder of the season it was slower so that on August 1, 1934, warehouse stocks were 8,527 bags or 28 per cent of the 1933 crop. The average f.o.b. rail price for 1933–34 was \$6.06, the highest since that of \$8.45 in 1930–31; but movement of the Red Kidney beans into the southern states was less than usual because of the superior quality of this variety produced in New York. With the new crop of about 48,000 bags, the production-plus-carryover amounted to approximately 57,000 bags as compared with 79,000 bags, the average 1930 to 1933. Prices declined from \$6.56 f.o.b. rail California in March, 1934, to \$5.44 in August, 1934, but thereafter rose to an average of \$6.46 in November.

Production of the California Red bean in California has declined in the past five years until it is definitely of minor importance at the present time. In 1933 the California crop of 12,000 bags was only 4 per cent of the total for this variety in the United States, while Idaho grew 317,000 bags or 96 per cent of the total. Furthermore, the 317,000 bag crop in Idaho in 1933 was 10 per cent smaller than the average for that state from 1929 to 1933. Trade disappearance from California warehouses in 1933–34 was somewhat slower than in 1932–33; and the carryover of the California Red beans in California warehouses at the beginning of the 1934–35 season was 2,600 bags or 22 per cent of the previous year's crop as compared with 1,489 bags and 2 per cent, respectively, at the beginning of the 1933–34 crop year. The 1934 crop was about 24,000 bags so that production-plus-carryover amounted to 27,000 bags as compared to 13,000 bags in 1933 and 40,000 bags, the average from 1930 to 1933. Prices in California which averaged \$3.49 (f.o.b. rail) in 1933–34 increased from \$3.33 in August to \$4.17 in September and \$4.83 in November, 1934.

POTATOES

With average yields per acre, production of potatoes in the United States is likely to be somewhat smaller in 1935 than in 1934. A potato crop in 1935 as large as that produced in 1934 would return potato growers about the same low prices and incomes for the crop year 1935–36 as in the current 1934–35 season.

Although low potato prices may prevail from now until next spring, growers, if they respond to price as they have in the past, will be influenced by the favorable prices received for their 1933 crop and will probably decrease their 1935 acreage only by 70,000 acres or 2 per cent of the acreage planted in 1934. This would make a total planted acreage of 3,313,000 acres in 1935. Average weather conditions would result in a yield of about 110 bushels per acre or a total production of about 365,000,000 bushels, which is less than the 1934 production of 383,105,000 bushels (as reported on November 1, 1934) but slightly above the 1928-1932 average of 363,395,000 bushels. This is a larger crop than can be marketed to advantage, and it now seems improbable that 1935 prices should be much above the low levels of the current season unless weather conditions are unusually bad, or unless a substantial increase occurs in consumer demand. Six times in the last ten years the total United States yield has been higher than 110 bushels per acre and yields of over 120 bushels have occurred twice in that period.

Since small crops normally result in larger total returns to growers than do large crops, it appears that potato growers in the United States would benefit next year if they reduced their acreage more than is now indicated. In the long run, it seems apparent that a stable acreage in the United States of around 3,000,000 acres, with yields varying from 100 to 120 bushels per acre and averaging about 110 bushels, would produce an ample supply of potatoes for all domestic requirements. The total United States production would then vary from 300,000,000 bushels in years of low yields to 360,000,000 bushels in years of bumper yields and would average over a period of years around 330,000,000 bushels. This average supply would result in fairly reasonable returns to the efficient growers in good locations. When more than 3,000,000 acres are planted, growers can expect low returns unless yields are smaller than usual.

The November 1 forecast of the Crop Reporting Board places the 1934 United States potato crop at 383,105,000 bushels as compared with 320,353,000 produced in 1933 and with 363,395,000 bushels, the average production for 1928-1932. The larger potato markets are located in the eastern and central states, and apparently they are well supplied for the coming winter and spring months. The total 1934 crop in the eleven southern early-producing states is estimated at 38,859,000 bushels or 8,588,000 more than their 1933 crop. In the intermediate states the crop is estimated at 33,370,000 bushels or 5,025,000 more than in 1933; and in the thirty late-producing states this year's forecast of 310,876,000 bushels is 49,139,000 more than these states produced in 1933. Potato production was about 39 per cent greater in the eastern late states in 1934 than in 1933, about 34 per cent greater in the central states, but 24

per cent less in the West. This decline was due to smaller yields, for the acreage harvested in the ten western surplus late-potato states in 1934 was 9 per cent larger than the average for the preceding four years. The fact that California's 1934 crop of potatoes was 21 per cent above the average for the preceding four years will tend to place California potatoes in a relatively favorable situation as compared to that of the other nine western surplus late-potato states. For all ten of the states, which include Nebraska, Montana, Idaho, Wyoming, Colorado, Utah, Nevada, Washington, Oregon, and California, the 1934 production of potatoes was estimated on November 1 to be 55,175,000 bushels.

The stored supplies of old potatoes will probably be large throughout the winter and spring of 1934-35 and they will probably have a depressing influence on the prices of early potatoes. Because the carryover will largely be located in the eastern states, its effect will be less pronounced upon the prices of California early potatoes than upon the prices of those produced in the southeastern states.

The commercial growers in the early states of Florida and the lower valley of Texas produced a crop 29 per cent larger than in 1933; but, on account of improved demand conditions and less competition from the old crop, they received slightly higher prices in 1934 than during the previous season. The October intentions-to-plant reports of the growers indicate that the 1935 commercial potato acreage in these earliest states may be increased by 9 per cent over that planted in 1934. In the early states of Alabama, California, Georgia, Louisiana, Mississippi, South Carolina, and Texas other than the lower Rio Grande Valley of Texas commercial early-potato acreage was increased 28 per cent in 1934, yields were increased by 17 per cent, and commercial production increased by almost 50 per cent, amounting to about 20 per cent more than the 1928-1932 average production of 8,857,000 bushels. For 1935, a 2 per cent decrease in acreage was indicated by these growers on October 1.

The second early states (North Carolina, Oklahoma, Arkansas, and Tennessee) and intermediate states (Virginia, Maryland, Kansas, Kentucky, Missouri, New Jersey, and Nebraska) produced much larger crops than in 1933 and received very low returns. Growers in these states on October 1 indicated their intentions to plant an acreage in 1935 about 5 per cent and 6 per cent, respectively, less than in 1934.

During the 1933-34 season, the production of potatoes in the late states was largely reduced because of low yields, and the returns to growers were the highest for several years. As a consequence, growers in these states increased their planted acreage in 1934 by 4.8 per cent, the greatest increases coming in Maine, Wisconsin, Nebraska, Idaho, Wyo-

ming, Washington, and California. This larger acreage, together with better-than-average yields, has resulted in greater-than-average production in nearly all except the western states. For 1935 it is expected that the acreage in all the late states will be reduced slightly which, with average yields, would result in a production slightly greater than the 290,000,000 bushels grown in 1934.

For the past twelve years the potato acreage harvested in California has been generally declining. The average area harvested in this state from 1922 to 1925 was 53,000 acres. In the succeeding four-year period, 1926-1929, the average declined to 44,000 acres. For 1930 to 1933 the average potato acreage harvested declined still further to 34,000. In 1934, 41,000 acres were harvested or an increase of 21 per cent over the average for the preceding four years. The situation relating to production is much the same as that of acreage in California. The corresponding four-year averages of production in this state were 8,932,000 bushels for the years 1922 to 1925; 7,749,000 bushels from 1926 to 1929; and 7,109,000 bushels from 1930 to 1933. Production of potatoes in California in 1934 was 8,610,000 bushels or 21 per cent above the average from 1930 to 1933. While California's potato acreage harvested has been on a downward trend, the yield in terms of bushels per acre has been steadily increasing over the past twelve years. Specifically, the average yield per acre in California from 1922 to 1925 was 172 bushels an acre. In the following four-year period this increased to 179 bushels an acre, and from 1930 to 1933 the average yield stood at 210 bushels an acre.

RICE

Supplies of rice in the United States for the 1934-35 season are about 6 per cent larger than they were in 1933-34. Prospects regarding the 1934-35 domestic utilization, exports, and shipments to insular possessions indicate a larger carryover at the close of the 1934-35 season than on August 1, 1934, which was the second largest on record. If United States rice acreage and production are not successfully controlled in 1935 at around the 1934 level, prices cannot be maintained at the level established under the marketing agreements.

Rice supplies from the southern states for the 1934-35 season are 3 per cent greater than those of 1933-34. The carryover from the previous year was larger, and the 1934 crop was about as large as that of 1933. The total carryover on August 1, 1934, amounted to 1,468,000 bags as against 1,093,000 bags on August 1, 1933. The 1934 southern rice crop was estimated on November 1, 1934, at 13,365,000 bags of 100 pounds as compared with 13,309,920 bags produced in 1933 and the 15,422,400-

bag average in the five years 1929–1933, which was used as the base period in the crop-control program.

Under the marketing agreement, effective September 26, 1933, the minimum price of Extra Fancy California-Japan milled rice, f. o. b. San Francisco, was set at \$3.60 per 100 pounds. The average market price of this grade of milled rice at San Francisco for the crop year ending July, 1934, however, was \$3.70. This was 40 per cent higher than the average of \$2.65 for the two preceding crop years and was only 3 per cent below the average of \$3.80 for the crop years 1928–29 to 1930–31. Production of California rough rice in 1933, however, was 272,000,000 pounds, the smallest crop since 1925 and 14 per cent smaller than the average production for 1929–1933 of 316,000,000 pounds. At the same time, the 1933 United States crop was 14 per cent less than the average crop, 1929–1933. At the close of the 1933–34 marketing season a relatively large carryover in California was estimated at 325,000 bags. In addition to this, the 1934 rice crop in California was placed by the November 1 Crop Report at 3,449,250 bags, or 27 per cent greater than the 2,718,900 bags grown in 1933, and 9 per cent greater than the average production during the five-year period 1929 to 1933. On October 15, 1934, the minimum price, f.o.b. San Francisco, on Extra Fancy California-Japan milled rice was raised to \$3.95. From August to November, 1934, the comparable simple-average market price was \$3.68.

The California crop in the current year was 20 per cent of the total for the United States and was grown on 14 per cent of the total acreage. This was due to two facts. The total acreage for the United States in 1934 was only 737,000 acres or 17 per cent less than the average, 1929–1933. The yield of 3,285 pounds an acre in California also was exceptionally high in 1934 and compares with a yield for the United States of 2,280 pounds an acre which, moreover, was 9 per cent above the 1929–1933 average. California rice acreage has remained relatively stable for the past five years. After reaching 160,000 acres in 1927 it declined and since 1929 has fluctuated between 95,000 and 125,000 acres. In 1934, 105,000 acres were harvested. The yield per acre, however, has been larger recently than formerly was the case. Thus, the large 1927 acreage yielded 2,500 pounds an acre to give a total production of 4,030,000 bags. From 1929 to 1933 the average yield was 2,886 pounds and production averaged 3,158,000 bags.

During 1933–34 total shipments from California to Hawaii and Puerto Rico were considerably smaller than in the previous season. The same is true of shipments of southern rice to Puerto Rico. The total shipments last season from the United States to Puerto Rico were 1,969,000 bags as compared with 2,360,000 bags in 1932–33. The decline in the

Puerto Rican shipments in 1933-34 may be attributed to limited buying power, some competition from the Philippine Islands, and to the higher prices asked for United States rice. The average shipments from California to Puerto Rico from 1928-29 to 1932-33 were 420,000 bags. In 1933-34 they amounted to 387,000 bags, and there is no reason for assuming that a larger quantity than this will be shipped in 1934-35.

Hawaii and the Pacific Coast markets will remain the principal outlets for California rice. The 1934 rice crop of Japan is estimated at about 159,400,000 bags of 100 pounds of cleaned rice as compared with the 1933 production of 222,513,000 bags. The November 1, 1934, carryover in that country is placed at the record level of 51,487,000 bags. The total Japanese rice supply, including probable imports from possessions, indicates relatively low prices of rice in Japan during 1934-35 as compared with No. 1 Brown rice at San Francisco.

Exports of rice from the United States during 1934-35 will be small because of the high price level of domestic rice as compared with foreign rice and comparatively liberal supplies in foreign countries. The various nationalistic import regulations of foreign governments contribute to restrict United States exports. Exports from the United States to Cuba may be increased somewhat during 1934-35 as a result of the reciprocal trade agreement with that country, which makes it less difficult for Cubans to purchase United States rice. The Cuban tariff plus the consumption tax on United States hulled and semihulled rice was reduced from \$1.01 to \$0.84 per 100 pounds while the tariff, including the tax, on rice from countries other than the United States remains at \$1.68 per 100 pounds. Exports of California-Japan rice for the past several years have been confined to relatively small quantities of paddy and brown rice to British Columbia. Even this, however, has fallen off because of competition from Oriental rices. No reason appears for anticipating improvement in export demand for California-Japan rice in 1934-35.

Imports of rice into the United States for the 12 months ending with July, 1934, amounted to 420,000 bags as compared with 220,000 bags in the preceding season. The increase was principally in broken rice for brewing purposes which rose from 28,000 bags in 1932-33 to 262,000 bags in 1933-34. In addition to the increase in broken rice imports, there has been a marked increase in competition in United States markets from foreign head rice. Imports from the Philippine Islands have increased rapidly. During 1933 imports from that source totaled only 2,000 bags, whereas for the first eight months of 1934, imports from those islands totaled about 37,000 bags. Market quotations on Philippine rice were generally below domestic prices.

SUGAR BEETS

With average yields in 1935, production of sugar beets in the United States on the proposed allotted acreage will be slightly less than the 1933 crop which was the largest on record. Control of sugar shipments from Hawaii, the insular possessions, and foreign countries will tend to prevent sugar in excess of market requirements from being brought into the United States.

Sugar-beet acreage in California increased from about 46,000 in 1926 to 112,000 acres in 1933 and 113,000 acres in 1934. The average for 1932–1934 was 111,000 acres. This represents a reversal of the downward trend in acreage which set in after 1917 when 162,000 acres were harvested. Previous to 1917 there had been nearly fifty years of increasing acreage since the inception of the industry in 1870. In central and northern California, sugar-beet acreage increased from 31,600 in 1929 to 77,600 in 1933. The 1934 acreage of 74,900 in this section compares with the average, 1932–1934, of 75,500 acres, which was 52 per cent larger than the average of 49,800 acres harvested from 1929 to 1931. Southern California sugar-beet acreage likewise increased 54 per cent from a 1929–1931 average of 22,900 acres to the 1932–1934 average of 35,300 acres. In 1934, 37,800 acres were harvested in that part of the state. Allotments of acreage under the sugar control plan for 1935 are 85,009 acres for northern and central California, and 39,918 acres in southern California, or a total for the state of 124,927 acres. In the years 1926–1929 California's sugar-beet acreage harvested averaged about 50,000 acres or approximately 7 per cent of the total for the United States, whereas by 1932–1934 the share had risen to about 13 per cent. Between these two periods, the United States total acreage increased 24 per cent from averages of 683,000 to 845,000 acres. In fact the 1933 harvest of 983,000 acres of sugar beets in the United States was the largest in the history of the industry and exceeded the former year of greatest acreage (1920) by 13 per cent.

In addition to California, notable increases in sugar-beet acreage between 1926–1929 and 1932–1934 have occurred in Michigan, Idaho, Montana, Utah, and Wyoming. Between these two periods, Michigan rose from an average of 81,000 acres in the former to 134,000 acres in the latter; Idaho's sugar-beet acreage increased from an average of 31,000 in the former to 56,000 in the latter; Montana, from an average of only 33,000 acres in the former to 61,000 acres in the latter; Utah, from an average of 51,000 to 55,000 acres; and Wyoming, from 41,000 to 44,000 acres. Colorado experienced a considerable expansion in acreage in 1930 and 1931, but it was not maintained and the 1932–1934

average for that state was 180,000 acres as compared with 205,000 acres from 1926 to 1929. On the basis of the 1930-1933 averages, however, Colorado with 26 per cent of the national sugar-beet acreage ranks first in that respect; Michigan is second with 13 per cent; California stands third with 12 per cent; Nebraska is fourth with 9 per cent, followed by Utah and Montana with 7 per cent each, and Idaho with 6 per cent.

The sugar-beet acreage allotted to California under the sugar control program amounts to about 124,927 acres. With a yield in 1935 equal to the average for the past six years of 12.17 tons an acre, production on this acreage would be about 1,520,000 tons. Production of sugar beets in California in 1934 was estimated on November 1 to be 1,518,000 tons as compared with 1,680,000 tons in 1933, 1,324,000 tons in 1932, and a four-year average from 1930 to 1933, of 1,208,000 tons. That may be compared with the average of about 507,000 tons produced from 1926 to 1929. This increase between these two periods advanced California's share of national production from around 7 per cent in the period 1926-1929 to about 16 per cent from 1932 to 1934. United States production increased 25 per cent from an average of 7,348,000 tons in 1926-1929, to 9,209,000 in 1932-1934.

As was the case with acreage, the United States production of 11,030,000 tons of sugar-beets in 1933 was an all-time peak. It exceeded the year of next largest production (1930) by almost 2,000,000 tons or 20 per cent. The heaviest increase in production in California in recent years took place north of the Tehachapi Mountains where the average sugar-beet production for 1932-1933 of 1,136,900 tons was 95 per cent larger than the average of 583,100 tons produced from 1929 to 1931. In southern California, the average production in 1932 and 1933 (365,100 tons) was 79 per cent greater than the 1929-1931 average (204,200 tons). Production in 1933 was 1,296,400 tons in northern and central California and 383,531 tons in southern California, or 122 and 88 per cent, respectively, more than the 1929-1931 averages. Considering the various states in their relative importance in terms of production, it appears that in terms of the 1930 to 1933 average, Colorado leads with 27 per cent of the total for the United States. California is second with an average of 13 per cent; Nebraska stands third with 11 per cent; followed by Michigan with 9 per cent; Utah, 8 per cent; Montana, 7 per cent; and Idaho, 6 per cent.

The farm price of sugar beets for the United States as a whole for 1933-34 was \$5.32 per ton which was \$1.19 or 18 per cent below the average of \$6.51 for 1928-1932. In the same years the average wholesale price of raw cane sugar (96° centrifugal duty paid) in New York declined from 4.2 cents a pound in 1928 to 3.2 cents in 1933.

With the recent restrictions placed on the volume of sugar admitted to American markets, control is now exercised over more than half of the world's sugar crop. World supplies in 1934 appear to be about the same as those of a year ago, when they were still regarded as large; but current supplies are smaller than two years ago. World sugar production has tended downward since the record set in 1930-31, which was the culmination of a ten-year upward movement. The 1933-34 estimates are running somewhat higher than in the preceding year. Marked reduction in reported stocks, on the other hand, have about offset the increased production. Stocks in countries (including Cuba) operating under the International Sugar Plan, now in its fourth season, were nearly 10 per cent smaller early in 1933-34 than stocks of a year earlier.

By the Costigan-Jones Amendment to the Agricultural Adjustment Act, of May 9, 1934, sugar in the United States was made a basic commodity subject to a processing tax not greater than the reduction in tariff rates. Pursuant to this Act, consumption requirements for continental United States were estimated to be 6,476,000 short tons (raw sugar equivalent). Marketing quotas for supplying these requirements were set for continental United States, the insular possessions, Cuba, and other foreign countries. The marketing quota for 1934 of United States grown sugar was fixed at 28 per cent (1,817,200 tons) of domestic sugar requirements, while that for offshore sugar was determined to be 72 per cent. Cuba, with 29 per cent of the total, is the largest single source, with the Philippines (16 per cent), Hawaii (14 per cent), Puerto Rico (12 per cent), and the Virgin Islands (less than 1 per cent) following in that order. The marketing quota for domestic sugar is divided between the beet-sugar-producing areas, which were allotted 24 per cent of the whole, and cane-sugar-producing areas, which were assigned 4 per cent. The intent of these quota provisions is to attempt to limit domestic output of both beet and cane sugar to the normal production of recent years and to provide that import quotas shall be adjusted as required to furnish the remaining supplies needed for domestic consumption.

Beet-sugar production in the United States for the 1933-34 crop year was 1,765,000 tons (raw sugar equivalent). This was by far the largest output on record. Production of beet sugar from the 1934 crop is indicated to be not more than 1,100,000 tons (raw sugar equivalent).

WHEAT

Since the spring of 1933 wheat prices in the United States have been maintained at unusually high levels in relation to world prices. This has

largely been the result of two successive years of low production due to poor yields and heavy abandonment of wheat in the United States, but acreage reduction and the removal of surplus wheat from the Pacific Northwest through governmental aid have also tended to increase United States prices as compared to world prices. Unless abandonment is heavy and yields are again below average next year, the new crop will provide an export surplus, and it is to be expected that prices in the United States may be but little above an export basis during most of the 1935-36 season.

The pressure of world surplus wheat stocks has been considerably relieved by two successive years of low yields in the United States and Canada; but acreage sown for the world, excluding Russia and China, has declined very little. Decreases in the wheat area in the United States, and to a lesser extent in Canada, Argentina, and Australia, have been largely offset by increases in Europe. Import barriers against wheat remain very high in most continental European countries.

The harvested acreage of wheat in the world, excluding Russia and China, for the crop year 1933-34 amounted to 247,000,000 acres as compared with a high point of 260,000,000 acres in 1930-31 and 259,000,000 in 1932-33. The reduction from 1932-33 to 1933-34 was due almost entirely to the 10,000,000 acre reduction in the wheat area of the United States. The area harvested in the United States has been reduced from a high point of 63,300,000 acres in 1929 to 47,500,000 in 1933, and 44,000,000 acres in 1934. The Canadian acreage harvested declined from a high point of 25,300,000 acres in 1929 to 24,000,000 in 1934; the Australian area harvested declined from a high of 18,200,000 acres in 1930-31 to 13,000,000 in 1934-35; and the Argentina acreage sown declined from a high point of 22,800,000 in 1928-29 to 18,500,000 (preliminary estimate) in 1934-35. Importing countries of Europe, on the other hand, have increased their wheat area from 51,900,000 acres in 1929 to 57,300,000 in 1934, while in the lower Danube Basin the area has remained practically constant at between 19,000,000 and 20,000,000 acres.

The world carryover of wheat into the current season appears to have been somewhat larger than that of a year earlier although the quantities available for export or carryover of the principal non-European countries, together with United Kingdom port stocks and quantities afloat, are about 38,000,000 bushels less than a year earlier. This was more than offset by an increase of about 60,000,000 bushels in the carryover of continental European countries. The United States and Canada were the only important exporting countries for which there was a decrease. The United States carryover was indicated to be about 100,000,000 bushels smaller than on July 1, 1933; whereas the Canadian carryover was de-

creased by only about 20,000,000 bushels. Argentina had an increase of about 46,000,000 bushels and Australia 35,000,000. As a result of a smaller world crop in 1934-35, world stocks may probably be reduced to a considerably lower level on July 1, 1935; but they are not likely to be reduced to what may be considered a normal level unless, because of the shortage of feed grains, there is very heavy feeding of wheat during the current season in the United States and Europe.

No estimates are yet available of the total United States wheat acreage sown or to be sown for harvest in 1935. There is some indication of intentions to increase the wheat acreage, especially in the eastern Wheat Belt where a much smaller proportion of the farmers signed wheat contracts than in the Great Plains and western states. The need for additional fall and winter pastures due to short feed crops has also stimulated seeding. The acreage which has been and will be planted for harvest in 1935 is likely to be above that seeded for harvest in 1934 and will be around 62,000,000 acres. This acreage with average abandonment and yields would result in a crop of approximately 790,000,000 bushels. Such a crop would exceed probable domestic utilization for the crop year 1935-36 by about 165,000,000 bushels. The actual situation, of course, will largely depend upon yields in 1935. Although moisture is still deficient in part of the Great Plains area, and it is doubtful whether these regions could obtain average yields on the area sown, weather or crop conditions this early in the season give no significant indication of probable yields of all wheat for the country as a whole. There is only one chance in three that the divergence of abandonment and yields from their average will result in a crop more than about 100,000,000 bushels above or below that suggested by the averages. The chances, however, are good that the United States will have a considerable export surplus of wheat in 1935-36. In the absence of any special measures (such as governmental aid to exports and storage) to relieve its pressure on the market, such a surplus would probably result in the United States prices' being on an average level not much above an export basis, with the possibility that they may reach an export basis at some time during the year.

Prices of wheat in the unprotected markets of the world began to fall rapidly in the latter half of 1929 and continued to do so with little interruption until late summer of 1931. In Great Britain prices advanced rapidly in the fall of 1931 as a result of the depreciation of the pound sterling; but in terms of the currencies of gold-standard countries, prices declined somewhat further in the two following years and reached their lowest levels in the spring of 1934. There was some improvement during the late spring and summer months, but Liverpool futures in terms of our former gold dollar are now a little less than 50 cents a

bushel. The rise that has taken place in Liverpool prices since the beginning of 1933, when converted to terms of United States currency, has been due primarily to the depreciation of the dollar.

The wheat crop in California in 1934 was 251,500 tons or 22 per cent less than the 1930-1933 average, and, with the exception of 1931, was the smallest crop since 1924. Since the 1934 acreage in California was 524,000 or only 11 per cent less than the 1930-1933 average, the small production was due to the low yield of 960 pounds per acre compared with a four-year average yield of 1,090 pounds for 1930-1933.

The average price of milling wheat at San Francisco for the crop year July, 1933, to June, 1934, was \$1.32 a hundredweight, and from July to November, 1934, the average price was \$1.49. These are to be compared with the price of \$1.09 in 1932-33, and the four-year average, 1930-31 to 1933-34, of \$1.26. The average price of all classes of wheat at six markets in the United States in 1933-34 was \$1.50 a hundredweight, whereas the average for 1930-31 to 1933-34 was \$1.16.

Statistics on movement of wheat and flour from the Pacific Northwest by water indicate that a total of 48,977,000 bushels was shipped in 1933-34, an increase of 60 per cent over the 30,601,000 bushels moved in this way in 1932-33, but 14 per cent less than the average of 56,995,000 bushels for the preceding five years. Domestic destinations recently have been receiving constantly increasing portions of the total water shipments from this area. Thus from 1927-28 to 1931-32, an average of 21 per cent of the total was so destined, in which years the percentage rose steadily from 14 per cent in 1927-28 to 33 per cent in 1931-32. In 1932-33 when 69 per cent of the total shipments were to domestic points, foreign markets took a much smaller part of such shipments than formerly. In 1933-34 the corresponding figure was 51 per cent.

Water shipments of wheat and flour (the latter expressed in terms of wheat) from the Pacific Northwest to California increased 100 per cent on the average (13,354,000 bushels) for the three years 1930-31 to 1932-33, as compared with the average of 6,666,000 bushels for the three years 1927-28 to 1929-30. Shipments of wheat accounted for the greater part of this increase, rising 445 per cent from an average of 1,221,000 bushels in the former period to 6,649,000 bushels in the latter period. Flour shipments, in terms of wheat, increased 23 per cent, averaging 5,446,000 bushels for 1927-28 to 1929-30 and 6,705,000 bushels for 1930-31 to 1932-33. In the crop year 1933-34, total water shipments of wheat and flour from the Pacific Northwest to California amounted to 10,377,000 bushels, a decline of 22 per cent from the average of the preceding three years. The bulk of this decrease was in wheat, of which

3,766,000 bushels were so shipped or only 57 per cent of the three-year average, 1930-31 to 1932-33. Flour shipments were virtually the same in 1933-34 (6,611,000 bushels) as for the average in the preceding three years (6,705,000 bushels).